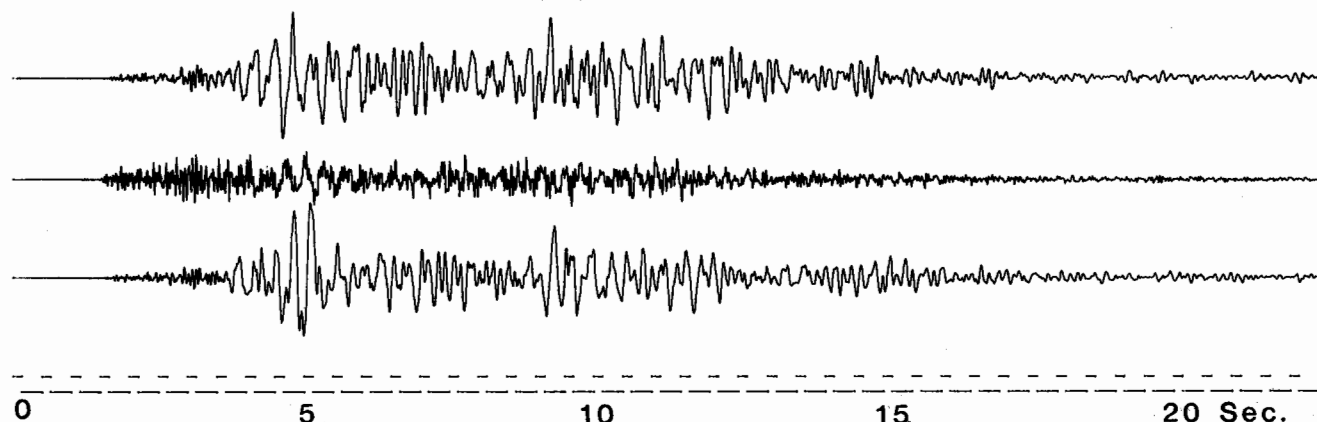


**CSMIP STRONG-MOTION RECORDS  
FROM THE  
BIG BEAR, CALIFORNIA  
EARTHQUAKE OF JUNE 28, 1992**



**Accelerogram from Big Bear Lake**

**CALIFORNIA DEPARTMENT OF CONSERVATION  
DIVISION OF MINES AND GEOLOGY  
OFFICE OF STRONG MOTION STUDIES  
REPORT OSMS 92-10**

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CSMIP STRONG-MOTION RECORDS

FROM THE

BIG BEAR, CALIFORNIA

EARTHQUAKE OF 28 JUNE 1992

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Report No. OSMS 92-10

California Strong Motion Instrumentation Program

California Department of Conservation

Division of Mines and Geology

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CSMIP STRONG-MOTION RECORDS FROM THE BIG BEAR,  
CALIFORNIA EARTHQUAKE OF 28 JUNE 1992

INTRODUCTION

Strong-motion accelerograms were recorded at 132 stations of the California Strong Motion Instrumentation Program (CSMIP) after the magnitude 6.6  $M_s$  earthquake that occurred near Big Bear Lake, California on June 28, 1992. The epicenter is located in the San Bernardino Mountains, about 11 km southeast of Big Bear Lake and 45 km northeast of San Bernardino. The epicentral distance of the CSMIP stations ranges from 11 km for the closest (Big Bear Lake) to about 180 km for the farthest (Santa Felicia Dam). The greatest ground acceleration recorded by CSMIP ground-response stations was 0.57 g at Big Bear Lake. The greatest accelerations recorded on structures were 0.75 g recorded at a concrete tilt-up building and 1.02 g at a freeway interchange.

The estimated location and magnitude of the Big Bear earthquake are:

Epicenter: 34.201N, 116.826W. Depth: 7 km (Caltech/USGS)  
Origin Time: 15:05:30.5, 28 June 1992 UTC (8:05 AM, PDT)  
Magnitude: 6.6  $M_s$  (NEIC), 6.5  $M_L$  (Caltech), 6.4  $M_w$  (Caltech)

Approximately 3 hours before the Big Bear earthquake, the magnitude 7.5  $M_s$  Landers earthquake occurred about 35 km east of the Big Bear epicenter. CSMIP strong-motion records from the Landers earthquake are included in the OSMS 92-09 report (1992a). Most of the damage due to the Big Bear earthquake was confined to the mountain communities in the Big Bear area. According to analyses by the USGS and Caltech, the earthquake had a left-lateral strike-slip mechanism along a N58E fault. There was no surface faulting reported. This report includes all CSMIP data from the Big Bear earthquake and supersedes the first Quick Report distributed on June 30 (CSMIP, 1992b) and the second Quick Report distributed on July 10 (CSMIP, 1992c).

HIGHLIGHTS OF CSMIP STRONG-MOTION DATA

Numerous new stations have been installed by CSMIP in the Los Angeles region in the last two years. Many of the stations are along the San Andreas fault system, and are part of a large planned array. These new stations have been sited in carefully studied geologic environments, including crystalline rock outcrops.

At the 132 CSMIP stations that recorded the Big Bear earthquake, a total of 218 records were obtained from over 950 strong-motion sensors. The 132 stations include 79 ground-response stations and 53 extensively-instrumented structures. The 53 structures include 45 buildings, 5 dams, a major freeway interchange, an airport control tower and a power plant.

The maximum acceleration values and the station parameters are presented in the tables at the beginning of this report for all records recovered. Most of the records are reproduced in this report as well. Records with very small amplitude (e.g., less than 5% g) generally have not been reproduced here, however.

Many of the CSMIP records from this event were recorded on digital recorders. These instruments provide enhanced frequency response and improved resolution at low levels of motion. They also record motion before the onset of the strong earthquake shaking (pre-event memory). Digital records allow presentation of the records in ways not practical for analog records. Many of the low-amplitude digital records have been plotted with 4x vertical exaggeration so that details in the record can be observed. In addition, records from individual sensors in the structures with digital recorders have been arranged in this report in an order that allows convenient visual interpretations of the records.

For some stations, because of the long duration and the traditional 1 sec/cm scale of accelerograms, important motion in the record occurs beyond the 22 seconds visible on a single panel, so the records from these stations include a second panel in this report.

Some specific highlights of the records include:

- **Big Bear Lake.** The closest CSMIP station is Big Bear Lake, located 11 km from the epicenter, which recorded maximum accelerations of 0.57 g horizontal and 0.21 g vertical. The duration of strong shaking was about 15 seconds. The Big Bear Lake record is also reproduced on the cover of this report.
- **San Bernardino area records.** Records were obtained from six buildings, one bridge and two ground-response stations in the City of San Bernardino. The area is about 45 km from the epicenter. The maximum recorded ground acceleration was 0.13 g. The maximum recorded accelerations in structures were 0.40 g at a 3-story steel building and 1.02 g at a freeway interchange discussed below. The buildings included three steel buildings, two concrete buildings, and a 1-story unreinforced-masonry infill building. The responses of these buildings are similar in amplitudes but shorter in duration than those during the Landers earthquake.
- **San Bernardino - I-10/215 Interchange.** Another important set of records was obtained from this freeway overpass southwest of San Bernardino. The overpass instrumented is the connecting structure between I-10 from Los Angeles and I-215 toward San Bernardino. The bridge is a long and curved structure, about 2540 feet long and 90 feet high near the center. It is typical of many in Southern California and similar to some which sustained heavy damage in the 1971 San Fernando earthquake. The bridge was recently strengthened by Caltrans and instrumented with 34 sensors by CSMIP. The ground motion near the bridge was 0.11 g. Higher accelerations (1.02 g) were recorded on the bridge deck. Similar to the Landers record, there are many spikes in the Big Bear record which indicate relative motion of the decks across the hinges.
- **Redlands area records.** Records were obtained from two buildings in the City of Redlands, about 36 km from the epicenter. The maximum recorded ground acceleration was 0.17 g. The buildings include a 7-story steel frame building and a 1-story concrete tilt-up warehouse. The responses of both buildings to the Big Bear earthquake were larger than those to the Landers earthquake. A peak acceleration of 0.75 g and large roof diaphragm motions were recorded at the concrete tilt-up warehouse.

- **Palm Springs area records.** The Joshua Tree station recorded 0.29 g during the Landers earthquake; during the Big Bear earthquake the peak acceleration was only 0.06 g. An acceleration of 0.23 g was recorded at the Desert Hot Springs station, about 40 km southeast of the epicenter. The Snow Creek station is a new station located on hard granitic rock at the base of Mount San Jacinto, about 37 km from the epicenter. The peak acceleration was 0.17 g which is larger than the 0.06 g recorded during the Landers earthquake. Records were also obtained from two buildings (one steel and one concrete) in the area. A 4-story hospital building in Palm Springs recorded a peak acceleration 0.08 g on the ground floor and 0.19 g at the roof. The motions are generally smaller than those during the Landers earthquake.
- **Downtown Los Angeles records.** Records were obtained from six buildings and two ground-response stations in downtown Los Angeles, about 130 km from the epicenter. The buildings include three steel buildings (54-, 52- and 17-story), a 17-story concrete building, and two unreinforced-masonry (URM) infill buildings. The 54-story building, built in 1991, is the tallest building instrumented by CSMIP and uses a framed tube system to resist lateral force. Maximum recorded acceleration was 0.03 g on the ground and 0.07 g in this building. Larger structural accelerations were recorded at a 17-story precast concrete building (0.17 g) and a 9-story URM infill building (0.18 g).
- **Pomona area records.** The stations in the Pomona area include a ground-response station, a 2-story concrete building and a 6-story URM-infill building. Maximum ground acceleration was 0.03 g. The peak acceleration recorded from the 6-story URM-infill building was 0.13 g, which is less than the amplitude recorded during the Landers earthquake (0.19 g) and the amplitude recorded during the 1990 Upland earthquake (0.37 g).
- **Base-isolated building records.** Records were obtained at three base-isolated buildings: 1) 2-story Los Angeles Fire Command/Control Building. An acceleration of 0.05 g was recorded at the foundation, 0.05 g above the isolators, and 0.05 g at the roof. 2) 7-story university hospital. Peak acceleration at the foundation, above the isolators and at the roof level was 0.05 g, 0.03 g, and 0.06 g, respectively. 3) 4-story Rancho Cucamonga Law and Justice Center. A peak acceleration of 0.07 g was recorded at the roof, 0.06 g at the base, and 0.05 g at the free field site. The responses of these three base-isolated buildings are less than those during the Landers earthquake.
- **Retrofitted 8-story Office Building in Seal Beach.** This is the first building retrofitted with seismic isolators in California. The concrete frame/waffle slab structure was constructed in 1967 and retrofitted in 1990. The retrofit includes a ductile concrete moment frame added to strengthen the exterior and the addition of isolators installed midway between the first and second floors. The building, approximately 126 km from the epicenter, recorded 0.04 g at the base and 0.08 g at the roof.
- **Hospital building records.** Records from a total of eight hospital buildings were obtained from the Big Bear earthquake. The eight hospitals, including the 7-story base-isolated university hospital discussed above, are located at distances ranging from 46 km to 150 km from the epicenter. The largest acceleration was recorded at a 5-story hospital in San Bernardino which had 0.32 g on the roof.

## ADDITIONAL STRONG-MOTION DATA

Several agencies in addition to CSMIP have strong-motion instruments in the southern California area. The University of Southern California maintains a network of 80 ground-response stations. The U.S. Geological Survey maintains instruments of its own and of other agencies in this area, and has published a preliminary report on selected records from six stations (USGS, 1992). In addition to these stations, smaller groups of stations are maintained by Caltech, Southern California Edison and other agencies. Finally, many private building owners in the City of Los Angeles have instruments in their buildings, as required by the City code.

## ORDER OF DATA PRESENTATION - HOW TO USE THIS REPORT

Three tables are included in this report to make cross-referencing stations and records as convenient as possible. The CSMIP strong-motion stations that recorded this earthquake are shown on the map in Figure 1 and on the inset maps of the San Bernardino area (Figure 2) and downtown Pasadena and Los Angeles (Figure 3). Each station is identified by a three-digit code on the map. This code and the corresponding station name are cross-referenced in Table 1, which, for convenience, appears near the station maps.

Once the station name is known, Table 2, which lists the stations in alphabetical order, can be used to obtain station characteristics such as coordinates and site geology. Table 3 lists earthquake- and station-dependent information, such as epicentral distance, sensor orientations, and peak acceleration values. Table 3 is arranged in approximately increasing epicentral distance. The number of the page on which the accelerogram is reproduced in this report is listed in all three tables.

The accelerograph record section of this report has three main groupings: ground-response stations, building stations and lifeline structure stations. The first section contains selected ground-response records, one record per page. In the case of low amplitude records from digital instruments, the records are plotted with a 4x vertical exaggeration so that details of the record can be easily seen. Note that some of the lowest amplitude records are not reproduced in this report.

The second section contains building response records. The presentation of the building records includes a picture of the building, a brief description of the structural system, and a schematic of the sensor layout. (For lower amplitude records, the picture of the building is not included.) Please note that, by convention, the orientation of sensors in a building is given by reference directions parallel to the principal building dimensions; the relationship of these directions to true geographic directions is given on the sensor layout and the building record. The introductory information is followed by one to four pages of records, depending on the number of sensors installed in the building. Selected records from digital instruments are plotted with a 4x vertical exaggeration. Some buildings have a ground-response station nearby to provide reference, or freefield, ground motion information. In these cases, the page number on which the reference record appears is given on the record. Note that some of the lowest amplitude building records are not reproduced in this report, but the peak values are included in Table 3.

The third section contains from lifeline structure records. The presentation for lifeline structures follows the format used for building records.

#### ACKNOWLEDGEMENTS

The California Strong Motion Instrumentation Program extends its appreciation to the individuals and organizations which have permitted and cooperated in the installation of seismic strong-motion equipment on their property. CSMIP also extends its appreciation to the members of the Strong Motion Instrumentation Advisory Committee and its subcommittees. Funding for instrumenting some of the hospitals in this report was provided by the Office of State-wide Health Planning and Development. Funding for the I-10/215 Interchange in San Bernardino was partially provided by the California Department of Transportation.

The records presented in this report were made possible through the efforts of many CSMIP technicians, both present and past, who installed and maintained the stations over the years. Record recovery following this earthquake was performed by W. Stephan, R. Meneely, K. Breitwieser, D. Driver, W. Thomson, D. Tarquino and R. Ayala. C. Petersen coordinated the extensive record recovery. L. Barrett, N. Seibert, Y. Corona and S. Rowley assisted in the preparation of this report. The efforts of all those involved made the timely publication of these data possible.

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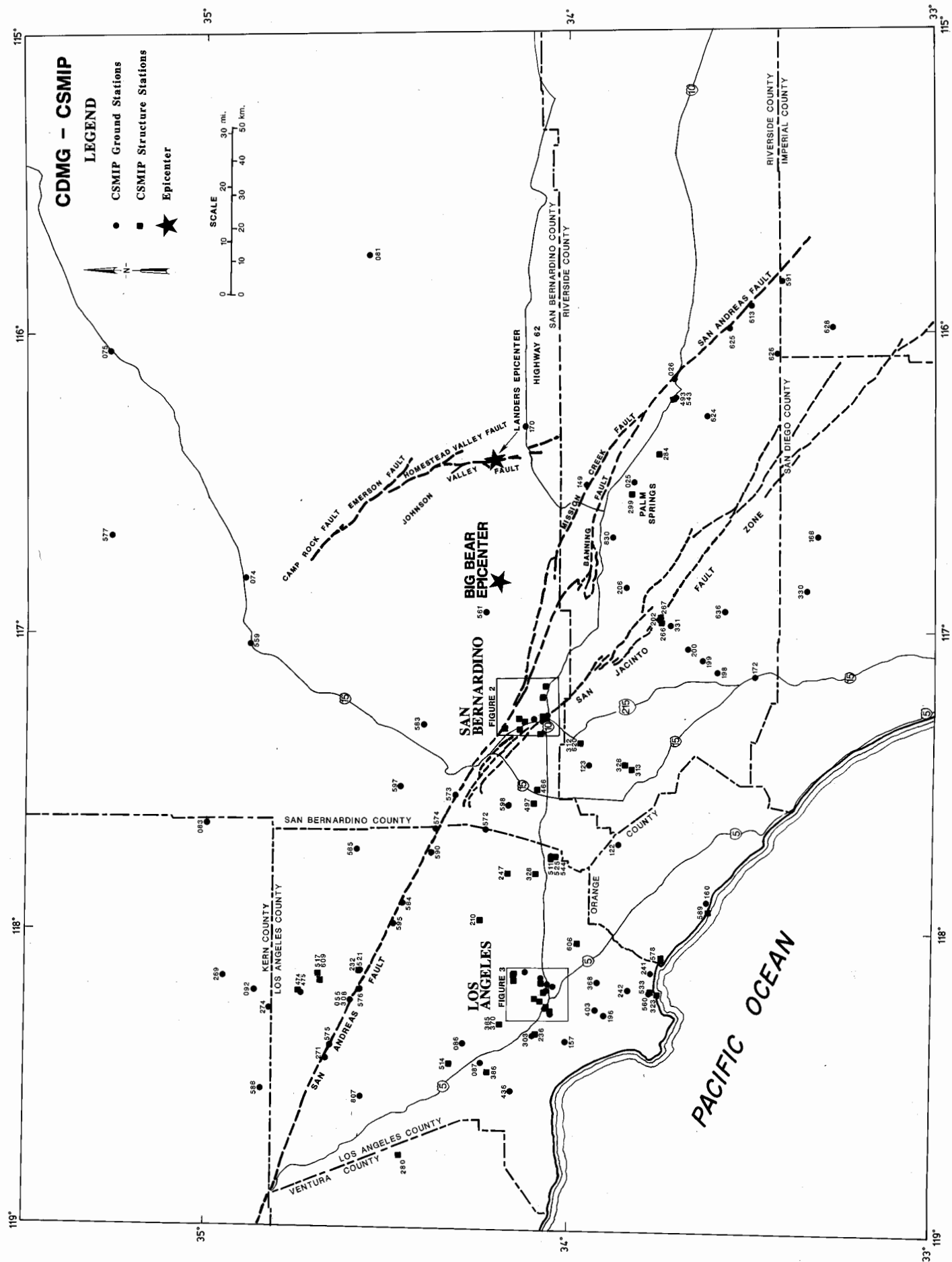


TABLE 1  
Station-Code Reference Table

<u>Code</u>	<u>Station Name</u>	<u>Record on</u> <u>Page</u>	<u>Code</u>	<u>Station Name</u>	<u>Record on</u> <u>Page</u>
025	Palm Springs - Airport	53	284	Palm Desert - 4-story Medical Office Bldg.	178
026	Indio - Coachella Canal	40	285	San Bernardino - 5-story CSUSB Library	73
055	Leona Valley #5 - Ritter Ranch	43	287	San Bernardino - 6-story Hotel	77
074	Yermo - Fire Station	67	299	Palm Springs - 4-story Hospital	105
075	Baker - Fire Station	--	303	Los Angeles - Hollywood Storage Bldg. FF	44
081	Amboy	34	308	Leona Valley #4	--
083	Boron - Fire Station	35	312	Riverside - 13-story Government Office Bldg.	--
087	Arleta - Nordhoff Ave Fire Sta.	--	313	Lake Mathews - Main Dam	222
088	Pacoima - Kagel Canyon Fire Sta. #74	--	323	Long Beach - 7-story Office Bldg.	134
092	Rosamond - Airport	--	326	Lake Mathews - Dike 1	223
122	Featherly Park - Park Maint. Bldg.	38	328	Puddingstone Reservoir - Puddingstone Dam	--
123	Riverside - Airport	58	330	Palomar Mountain - Palomar Observatory	--
149	Desert Hot Springs - Fire Station	33	331	Hemet - Stetson Ave Fire Station	38
157	Los Angeles - Baldwin Hills	44	368	Downey - County Maint. Bldg.	35
160	Newport Beach - Irvine Ave. Fire Station	53	370	Burbank - 6-story Commercial Bldg.	119
168	Puerta La Cruz - USFS Storage Bldg.	56	385	Burbank - 10-story Residential Bldg.	122
170	Joshua Tree - Fire Station	40	386	Van Nuys - 7-story Hotel	203
172	Temecula - 6th & Mercedes	66	400	Los Angeles - Obregon Park	46
196	Inglewood - Union Oil Yard	--	401	San Marino - Southwestern Academy	--
198	Murrieta Hot Springs - Collins Ranch	46	403	Los Angeles - 116th St. School	--
199	Winchester - Bergman Ranch	66	436	Tarzana - Cedar Hill Nursery	65
200	Winchester - Hidden Valley Farms	67	461	Alhambra - Fremont School	--
202	San Jacinto - Valley Cemetery	58	466	Etiwanda - Power Plant	225
206	Silent Valley - Poppet Flat	65	468	Los Angeles - 8-story CSULA Admin. Bldg.	147
210	Cogswell Reservoir - Cogswell Dam	219	474	Lancaster - Fox Airfield Airport Control Tower	227
232	Palmdale - 4-story Hotel	--	475	Lancaster - Fox Airfield Grounds	--
236	Los Angeles - Hollywood Storage Bldg.	156	481	Redlands - 7-story Commercial Bldg.	101
241	Long Beach - Recreation Park	--	495	Redlands - 1-story Warehouse	97
242	Long Beach - Rancho Los Cerritos	43	497	Rancho Cucamonga - Law & Justice Center Lot	112
247	Big Dalton Reservoir - Big Dalton Dam	--	497	Rancho Cucamonga - Law and Justice Center	109
266	Hemet - 1-story Library	127	511	Pomona - 2-story Commercial Bldg.	192
267	Hemet - 4-story Hospital	129	514	Sylmar - 6-story County Hospital Parking Lot	--
269	Mojave - Hwy 14 & Backus Rd	--	514	Sylmar - 6-story County Hospital	--
271	Lake Hughes #1 - Fire Station #78	--	515	San Bernardino - 9-story Commercial Bldg.	81
274	Rosamond - Godde Ranch	--	516	San Bernardino - 3-story Office Bldg.	89
280	Lake Piru - Santa Felicia Dam	--	517	Lancaster - 3-story Office Bldg.	133

**Figure 1. Index Map showing CSMIP stations which recorded the June 28, 1992 Big Bear Earthquake. (see facing page)**

The San Andreas fault, the San Jacinto fault, the epicenter of the Landers earthquake and its associated surface rupture are shown for reference. Stations are identified by a three digit code cross-referenced to station names in Table 1. Within the San Bernardino and downtown Los Angeles areas are closely-spaced CSMIP stations; please refer to inset Figures 2 and 3 for these metropolitan areas.

TABLE 1  
Station-Code Reference Table (Continued)

<u>Code</u>	<u>Station Name</u>	<u>Record on</u> <u>Page</u>	<u>Code</u>	<u>Station Name</u>	<u>Record on</u> <u>Page</u>
521	Palmdale - Hwy 14 & Palmdale Blvd	--	586	Neenach - Sacatara Creek	--
522	San Bernardino - 2nd & Arrowhead	61	589	Newport Beach - 11-story Hospital	175
525	Pomona - 4th & Locust	56	590	Wrightwood - Jackson Flat	--
533	Long Beach - 15-story Government Office Bldg.	--	591	North Shore - Durmid	51
540	Colton - 1-story School Gym	125	592	Los Angeles - City Terrace	45
541	Pasadena - 6-story Office Bldg.	180	595	Little Rock - Brainard Canyon	--
542	San Bernardino - E & Hospitality	62	597	Phelan - Wilson Ranch Road	55
543	Indio - Riverside Co. Fairgrounds	41	598	Rancho Cucamonga - Deer Canyon	57
544	Pomona - 6-story Commercial Bldg.	194	601	Los Angeles - 17-story Residential Bldg.	162
546	Pasadena - 12-story Commercial/ Office Bldg.	186	602	Los Angeles - 52-story Office Bldg.	165
559	Barstow - Vineyard & H St.	34	603	San Diego - 19-story Commercial Bldg.	200
560	Long Beach - City Hall Grounds	--	605	Los Angeles - 7-story University Hospital	142
561	Big Bear Lake - Civic Center Grounds	33	605	Los Angeles - University Hospital Free Field	48
566	Pasadena - 12-story Office Bldg.	189	606	Whittier - 8-story Hotel	206
569	Los Angeles - 15-story Gov. Office Bldg.	159	607	Lake Hughes 12A	--
571	Pasadena - 9-story Commercial Bldg.	183	609	Lancaster - 5-story Hospital	130
572	Mt. Baldy - Elementary School	50	611	Los Angeles - Temple & Hope	47
573	Wrightwood - Nielson Ranch	68	612	Los Angeles - Pico & Sentous	--
574	Wrightwood - Swarthout Valley	69	613	North Shore - Salton Sea State Park HQ	52
575	Elizabeth Lake	37	620	Riverside - 2-story Govt. Office Bldg.	197
576	Anaverde Valley - City Ranch	--	622	San Bernardino - 1-story Commercial Bldg.	93
577	Fort Irwin	--	624	Lake Cahuilla	42
578	Seal Beach - 8-story Office Bldg.	113	625	Mecca - CVWD Yard	49
578	Seal Beach - 8-story Office Bldg. Parking Lot	63	626	Desert Shores	36
579	Los Angeles - 9-story Office Bldg.	150	628	Salton City	60
580	Los Angeles - 2-story Fire Command Bldg.	139	629	Los Angeles - 54-story Office Bldg.	170
581	Los Angeles - 12-story Com/Office Bldg.	153	630	Snow Creek	64
583	Hesperia - 4th & Palm	39	631	San Bernardino - I10/215 Interchange	211
584	Pearblossom - Pallet Creek	54	634	San Bernardino - 5-story Hospital	85
585	Palmdale - Black Butte	--	636	Sage - Fire Station	59

Footnote: Peak accelerations for all stations which recorded the Big Bear earthquake are listed in Table 3. However, certain records with small amplitude are not reproduced in the report.

The 3-digit code identifies CSMIP stations as follows:

The 3-digit code identifies CSMIP stations as follows:

- |     |  |     |   |
|-----|--|-----|---|
| 287 | San Bernardino — 6-story Hotel               | 522 | San Bernardino — 2nd & Arrowhead          |
| 285 | San Bernardino — 5-story CSUSB Library       | 540 | Colton — 1-story School Gym               |
| 481 | Redlands — 7-story Commercial Building       | 542 | San Bernardino — E & Hospitality          |
| 495 | Redlands — 1-story Warehouse                 | 622 | San Bernardino — 1-story Commercial Bldg. |
| 515 | San Bernardino — 9-story Commercial Building | 631 | San Bernardino — I-10/215 Interchange     |
| 516 | San Bernardino — 3-story Office Building     | 634 | San Bernardino — 5-story Hospital         |

The 3-digit code identifies CSMIP stations as follows:

400	LA — Obregon Park	579	LA — 9-story Office Bldg.
401	San Marino — Southwestern Academy	580	LA — 2-story Fire Command/Control Bldg.
461	Alhambra — Fremont School	581	LA — 12-story Commercial/Office Bldg.
468	LA — 8-story CSULA Administration Bldg.	592	LA — City Terrace
541	Pasadena — 6-story Office Bldg.	601	LA — 17-story Residential Bldg.
546	Pasadena — 12-story Commercial/Office Bldg.	602	LA — 52-story Office Bldg.
566	Pasadena — 12-story Office Bldg.	605	LA — 7-story University Hospital
569	LA — 15-story Government Office Bldg.	611	LA — Temple and Hope
571	Pasadena — 9-story Commerical Bldg.	612	LA — Pico and Sentous
		629	LA — 54-story Office Bldg.

TABLE 2  
CSMIP Strong-Motion Stations - Big Bear Earthquake

<u>Station Name</u>	<u>N.Lat.</u>	<u>W.Long.</u>	<u>Station No.</u>	<u>Code</u>	<u>Site Geology</u>	<u>Record on Page*</u>
Alhambra - Fremont School	34.070	118.150	24461	461	Alluvium	--
Alpine - Fire Station	32.838	116.724	02467	467	Alluvium	nt
Altadena - Eaton Canyon Park	34.177	118.096	24402	402	Alluvium	nt#
Amboy	34.560	115.743	21081	081	Alluvium (~3m) over basalt	34
Anaverde Valley - City Ranch	34.580	118.199	24576	576	Alluvium	--
Antelope Buttes	34.758	118.361	24310	310	Weathered granitic rock	nt
Arleta - Nordhoff Ave Fire Sta.	34.236	118.439	24087	087	Alluvium	--
Baker - Fire Station	35.272	116.066	32075	075	Deep alluvium	--
Barstow - Vineyard & H St.	34.887	117.047	23559	559	Alluvium	34
Big Bear Lake - Civic Center Grounds	34.238	116.935	22561	561	Shallow alluvium over granite bedrock	33
Big Dalton Reservoir - Big Dalton Dam	34.170	117.808	23247	247	Granitic rock (diorite)	--
Bombay Beach - Bertram	33.397	115.776	11627	627	Sandstone (indurated)	nt#
Boron - Fire Station	35.002	117.650	33083	083	Deep alluvium	35
Burbank - 10-story Residential Bldg.	34.187	118.311	24385	385	Alluvium	122
Burbank - 6-story Commercial Bldg.	34.185	118.308	24370	370	Alluvium	119
Castaic - Halsey Canyon	34.459	118.650	24277	277	Alluvium	nt
Castaic - Old Ridge Route	34.564	118.642	24278	278	Sedimentary rock	nt
Century City - LACC North	34.063	118.418	24389	389	Terrace deposits	nt
Century City - LACC South	34.062	118.416	24390	390	Terrace deposits	nt
Cogswell Reservoir - Cogswell Dam	34.245	117.964	23210	210	Weathered granitic rock	219
Colton - 1-story School Gym	34.072	117.335	23540	540	Deep alluvium	125
Desert Hot Springs - Fire Station	33.962	116.509	12149	149	Deep alluvium	33
Desert Shores	33.426	116.078	12626	626	Alluvium	36
Downey - County Maint. Bldg.	33.924	118.167	14368	368	Deep alluvium	35

TABLE 2  
CSMIP Strong-Motion Stations (Continued)

<u>Station Name</u>	<u>N.Lat.</u>	<u>W.Long.</u>	<u>Station No.</u>	<u>Code</u>	<u>Site Geology</u>	<u>Record on Page*</u>
Elizabeth Lake	34.662	118.387	24575	575	Lake & fluvial deposits	37
Etiwanda - Power Plant	34.091	117.527	23466	466	Alluvium	225
Fairmont Reservoir - Fairmont Dam Right Abutment	34.704	118.426	24270	270	Granitic rock	nt
Featherly Park - Park Maint. Bldg.	33.869	117.709	13122	122	Alluvium	38
Fort Irwin	35.268	116.684	24577	577	Deep alluvium	--
Hemet - 1-story Library	33.748	116.966	12266	266	Deep alluvium	127
Hemet - 4-story Hospital	33.750	116.959	12267	267	Deep alluvium	129
Hemet - Stetson Ave Fire Station	33.729	116.979	12331	331	Deep alluvium	38
Hesperia - 4th & Palm	34.405	117.311	23583	583	Alluvium	39
Huntington Beach - Lake Street Fire Station	33.662	117.997	13197	197	Sand (~4m) over deep alluvium	nt
Indio - 4-story Govt. Office Bldg.	33.714	116.221	12493	493	Deep alluvium	nr2
Indio - Coachella Canal	33.717	116.156	12026	026	Deep alluvium	40
Indio - Riverside Co. Fairgrounds	33.715	116.221	12543	543	Deep alluvium	41
Inglewood - Union Oil Yard	33.905	118.279	14196	196	Terrace deposits	--
Irvine - 8-story UCI Engineering Bldg.	33.645	117.840	13329	329	Soil (~1m) over sandstone	nt
Joshua Tree - Fire Station	34.131	116.314	22170	170	Shallow alluvium over granite bedrock	40
Keene - Fire Station	35.225	118.565	34095	095	Fill & alluvium over granodiorite	nt
Lake Cahuilla	33.628	116.280	12624	624	Granitic bedrock (hard granodiorite)	42
Lake Hughes #1 - Fire Station #78	34.674	118.430	24271	271	Alluvium (~300m) over granite bedrock	--
Lake Hughes #4 - Camp Mendenhall (near water tank)	34.650	118.478	24469	469	Weathered granitic bedrock	nt
Lake Hughes #4B - Camp Mendenhall	34.650	118.477	24523	523	Weathered granitic bedrock	nt
Lake Hughes #9	34.608	118.558	24272	272	Metamorphic bedrock (gneiss)	nt
Lake Hughes 12A	34.571	118.560	24607	607	Stream channel deposits	--
Lake Mathews - Dike 1	33.854	117.444	13326	326	Fill	223

TABLE 2  
CSMIP Strong-Motion Stations (Continued)

<u>Station Name</u>	<u>N.Lat.</u>	<u>W.Long.</u>	<u>Station No.</u>	<u>Code</u>	<u>Site Geology</u>	<u>Record on Page*</u>
Lake Mathews - Main Dam	33.836	117.461	13313	313	Fill	222
Lake Piru - Santa Felicia Dam	34.460	118.753	24280	280	Sandstone & shale	--
Lancaster - 15th & J	34.688	118.156	24526	526	Alluvium	nt
Lancaster - 3-story Office Bldg.	34.688	118.157	24517	517	Alluvium	133
Lancaster - 5-story Hospital	34.688	118.158	24609	609	Alluvium	130
Lancaster - Fox Airfield Airport Control Tower	34.739	118.214	24474	474	Alluvium	227
Lancaster - Fox Airfield Grounds	34.739	118.214	24475	475	Alluvium	--
Leona Valley #1	34.594	118.242	24305	305	Alluvium (~5m) over crystalline rock	nt
Leona Valley #2	34.595	118.243	24306	306	Alluvium	nt
Leona Valley #3	34.596	118.243	24307	307	Metamorphic bedrock (gneiss)	nt
Leona Valley #4	34.598	118.242	24308	308	Alluvium	--
Leona Valley #5 - Ritter Ranch	34.600	118.241	24055	055	Alluvium	43
Leona Valley #6	34.604	118.244	24309	309	Alluvium	nt
Littlerock - Brainard Canyon	34.486	117.980	23595	595	Granitic bedrock (granodiorite)	--
Long Beach - 15-story Government Office Bldg.	33.768	118.195	14533	533	Terrace deposits	--
Long Beach - 5-story CSULB Engineering Bldg.	33.783	118.112	14311	311	Deep alluvium	nr1
Long Beach - 7-story Office Bldg.	33.755	118.200	14323	323	Deep alluvium	134
Long Beach - 7-story Office Bldg. FF	33.754	118.200	14395	395	Deep alluvium	nt
Long Beach - City Hall Grounds	33.768	118.196	14560	560	Terrace deposits	--
Long Beach - Rancho Los Cerritos	33.840	118.194	14242	242	Deep alluvium	43
Long Beach - Recreation Park	33.778	118.133	14241	241	Terrace deposits	--
Los Angeles - 116th St. School	33.929	118.260	14403	403	Terrace deposits	--
Los Angeles - 12-story Commercial/Office Bldg.	34.048	118.260	24581	581	Alluvium	153
Los Angeles - 13-story Office Bldg.	34.050	118.247	24567	567	Alluvium (5m) over sedimentary rock	nt#

TABLE 2  
CSMIP Strong-Motion Stations (Continued)

<u>Station Name</u>	<u>N.Lat.</u>	<u>W.Long.</u>	<u>Station No.</u>	<u>Code</u>	<u>Site Geology</u>	<u>Record on Page*</u>
Los Angeles - 15-story Government Office Bldg.	34.058	118.249	24569	569	Siltstone	159
Los Angeles - 17-story Residential Bldg.	34.053	118.248	24601	601	Siltstone	162
Los Angeles - 2-story Fire Command Control Bldg.	34.053	118.171	24580	580	Siltstone	139
Los Angeles - 3-story Commercial Bldg.	34.058	118.417	24332	332	Terrace deposits	nt
Los Angeles - 5-story Warehouse	34.028	118.223	24463	463	Alluvium	nt
Los Angeles - 52-story Office Bldg.	34.051	118.259	24602	602	Alluvium (7m) over sedimentary rock	165
Los Angeles - 54-story Office Bldg.	34.048	118.260	24629	629	Alluvium over sedimentary rock	170
Los Angeles - 7-story UCLA Math-Science Bldg.	34.069	118.442	24231	231	Terrace deposits	nt
Los Angeles - 7-story University Hospital	34.062	118.198	24605	605	Siltstone	142
Los Angeles - 8-story CSULA Admin. Bldg.	34.067	118.168	24468	468	Siltstone	147
Los Angeles - 9-story Office Bldg.	34.044	118.261	24579	579	Alluvium	150
Los Angeles - Baldwin Hills	34.009	118.361	24157	157	Fill (~ 1m) over shale, sandstone	44
Los Angeles - City Terrace	34.053	118.171	24592	592	Siltstone	45
Los Angeles - Hollywood Storage Bldg.	34.090	118.338	24236	236	Alluvium (~ 600m) over sandstone & shale	156
Los Angeles - Hollywood Storage Bldg. FF	34.090	118.339	24303	303	Alluvium (~ 600m) over sandstone & shale	44
Los Angeles - Obregon Park	34.037	118.178	24400	400	Alluvium	46
Los Angeles - Pico & Sentous	34.043	118.271	24612	612	Alluvium	--
Los Angeles - Temple & Hope	34.059	118.246	24611	611	Siltstone	47
Los Angeles - University Hospital Free Field	34.062	118.198	24605	605	Siltstone	48
Los Angeles - Vincent Thomas Bridge	33.750	118.271	14406	406	Alluvium	nt
Malibu - Point Dume	34.077	118.800	24396	396	Marine Terrace deposits over Sedimentary Bedrock	nt
Mecca - CVWD Yard	33.564	115.987	11625	625	Deep alluvium	49
Mojave - Hwy 14 & Backus Rd	34.956	118.159	24269	269	Shallow alluvium over volcanic bedrock	--
Mojave - Hwys 14 & 58	35.070	118.175	34093	093	Alluvium	nt

TABLE 2  
CSMIP Strong-Motion Stations (Continued)

<u>Station Name</u>	<u>N.Lat.</u>	<u>W.Long.</u>	<u>Station No.</u>	<u>Code</u>	<u>Site Geology</u>	<u>Record on Page*</u>
Mt. Baldy - Elementary School	34.233	117.661	23572	572	Shallow alluvium over granitic bedrock	50
Mt. Wilson - Caltech Seismic Station	34.224	118.057	24399	399	Granitic rock (quartz diorite)	nt
Murrieta Hot Springs - Collins Ranch	33.599	117.132	13198	198	Thin soil (1m) over weathered granite	46
Neenach - Sacatara Creek	34.848	118.536	24586	586	Alluvium	--
Newhall - LA County Fire Sta.	34.390	118.530	24279	279	Alluvium	nt
Newport Beach - 11-story Hospital	33.624	117.929	13589	589	Sedimentary rock	175
Newport Beach - Irvine Ave. Fire Station	33.634	117.902	13160	160	Alluvium	53
Newport Beach - Newport Blvd. & Coast Highway	33.623	117.931	13610	610	Sedimentary rock	nt#
Niland - Fire Station	33.239	115.512	11023	023	Alluvium	nt
North Hollywood - 20-story Hotel	34.138	118.359	24464	464	Sandstone, shale	nt
North Shore - Durmid	33.421	115.831	11591	591	Alluvium over soft sedimentary bedrock	51
North Shore - Salton Sea State Park HQ	33.504	115.913	11613	613	Alluvium over soft sedimentary bedrock	52
Oak Creek Canyon	35.042	118.377	34237	237	Alluvium	nt
Ocean Beach	32.749	117.241	03121	121	Soil & fill (3m) over sedimentary rocks	nt
Oceanside B - Fire Station #3	33.201	117.331	13333	333	Alluvium	nt
Pacoima - Kagel Canyon Fire Sta. #74	34.288	118.375	24088	088	Sandstone	--
Pacoima Reservoir - Pacoima Dam	34.334	118.396	24207	207	Metamorphic bedrock (diorite gneiss)	nt
Palm Desert - 4-story Medical Office Bldg.	33.762	116.407	12284	284	Deep alluvium	178
Palm Springs - 4-story Hospital	33.838	116.541	12299	299	Deep alluvium	105
Palm Springs - Airport	33.829	116.501	12025	025	Deep alluvium	53
Palmdale - 4-story Hotel	34.581	118.134	24232	232	Alluvium	--
Palmdale - Black Butte	34.586	117.728	23585	585	Granitic bedrock (quartz monzonite)	--
Palmdale - Hwy 14 & Palmdale Blvd	34.581	118.135	24521	521	Alluvium	--
Palomar Mountain - Palomar Observatory	33.353	116.862	12330	330	Granitic bedrock	--

TABLE 2  
CSMIP Strong-Motion Stations (Continued)

<u>Station Name</u>	<u>N.Lat.</u>	<u>W.Long.</u>	<u>Station No.</u>	<u>Code</u>	<u>Site Geology</u>	<u>Record on Page*</u>
Pasadena - 12-story Commercial/ Office Bldg.	34.146	118.146	24546	546	Deep Alluvial fan	186
Pasadena - 12-story Office Bldg.	34.149	118.151	24566	566	Deep alluvium fan	189
Pasadena - 6-story Office Bldg.	34.146	118.147	24541	541	Deep Alluvial fan	180
Pasadena - 9-story Commercial Bldg.	34.146	118.143	24571	571	Deep alluvial fan	183
Pearblossom - Pallet Creek	34.458	117.909	23584	584	Granitic bedrock (quartz diorite)	54
Phelan - Wilson Ranch Road	34.467	117.520	23597	597	Alluvium	55
Pomona - 2-story Commercial Bldg.	34.054	117.749	23511	511	Alluvium	192
Pomona - 4th & Locust	34.056	117.748	23525	525	Alluvium	56
Pomona - 6-story Commercial Bldg.	34.057	117.752	23544	544	Alluvium	194
Puddingstone Reservoir - Puddingstone Dam	34.091	117.808	23328	328	Crystalline rock, shale	--
Puerta La Cruz - USFS Storage Bldg.	33.324	116.683	12168	168	Thin alluvium (8m?) over granite	56
Rancho Cucamonga - Deer Canyon	34.169	117.579	23598	598	Granitic bedrock	57
Rancho Cucamonga - Law & Justice Center Parking Lot (Chns 17-19)	34.104	117.574	23497	497	Deep alluvium (~250m) over granitic rock	112
Rancho Cucamonga - Law and Justice Center	34.104	117.574	23497	497	Deep alluvium (~250m) over granitic rock	109
Rancho Palos Verdes - Hawthorne Blvd.	33.746	118.396	14404	404	Shale and basalt	nt
Redlands - 1-story Warehouse	34.066	117.214	23495	495	Alluvium	97
Redlands - 7-story Commercial Bldg.	34.056	117.178	23481	481	Alluvium	101
Riverside - 13-story Government Office Bldg.	33.978	117.373	13312	312	Alluvium	--
Riverside - 2-story Govt. Office Bldg.	33.979	117.373	13620	620	Alluvium	197
Riverside - Airport	33.951	117.446	13123	123	Alluvium	58
Rolling Hills Estates - Rancho Vista School	33.787	118.356	14405	405	Shale	nt
Rosamond - Airport	34.870	118.206	24092	092	Alluvium	--
Rosamond - Godde Ranch	34.827	118.265	24274	274	Alluvium	--
Sage - Fire Station	33.580	116.931	12636	636	Shallow alluvium over granitic bedrock	59

TABLE 2  
CSMIP Strong-Motion Stations (Continued)

<u>Station Name</u>	<u>N.Lat.</u>	<u>W.Long.</u>	<u>Station No.</u>	<u>Code</u>	<u>Site Geology</u>	<u>Record on Page*</u>
Salton City	33.280	115.984	11628	628	Deep alluvium	60
San Bernardino - 1-story Commercial Bldg.	34.098	117.293	23622	622	Deep alluvium	93
San Bernardino - 2nd & Arrowhead	34.103	117.289	23522	522	Deep alluvium	61
San Bernardino - 3-story Office Bldg.	34.065	117.289	23516	516	Deep alluvium	89
San Bernardino - 5-story CSUSB Library	34.183	117.323	23285	285	Deep alluvium	73
San Bernardino - 5-story Hospital	34.132	117.321	23634	634	Deep alluvium	85
San Bernardino - 6-story Hotel	34.065	117.279	23287	287	Deep alluvium	77
San Bernardino - 9-story Commercial Bldg.	34.104	117.292	23515	515	Deep alluvium	81
San Bernardino - E & Hospitality	34.065	117.292	23542	542	Deep alluvium	62
San Bernardino - I10/215 Interchange	34.064	117.296	23631	631	Deep alluvium	211
San Diego - 19-story Commercial Bldg.	32.718	117.160	03603	603	Alluvium	200
San Jacinto - Valley Cemetery	33.760	116.960	12202	202	Deep alluvium	58
San Marino - Southwestern Academy	34.115	118.130	24401	401	Deep alluvial fan	--
San Pedro - Palos Verdes	33.722	118.309	14159	159	Sandstone	nt
Santa Monica - City Hall Grounds	34.011	118.490	24538	538	Alluvium	nt
Sawmill Mountain - Caltech Seismic Station	34.719	118.581	24082	082	Granitic bedrock	nt
Seal Beach - 8-story Office Bldg.	33.757	118.084	14578	578	Alluvium	113
Seal Beach - 8-story Office Bldg. Parking Lot	33.757	118.084	14578	578	Alluvium	63
Sherman Oaks - 13-story Commercial Bldg.	34.154	118.465	24322	322	Alluvium	nt
Silent Valley - Poppet Flat	33.851	116.852	12206	206	Weathered granite	65
Snow Creek	33.888	116.684	12630	630	Hard granitic bedrock (granodiorite)	64
Sylmar - 6-story County Hospital Parking Lot	34.326	118.444	24514	514	Alluvium	--
Sylmar - 6-story County Hospital	34.326	118.444	24514	514	Alluvium	--
Tarzana - Cedar Hill Nursery	34.160	118.534	24436	436	Shallow alluvium (10m) over siltstone	65

TABLE 2  
CSMIP Strong-Motion Stations (Continued)

<u>Station Name</u>	<u>N.Lat.</u>	<u>W.Long.</u>	<u>Station No.</u>	<u>Code</u>	<u>Site Geology</u>	<u>Record on Page*</u>
Tehachapi - Valley Blvd & Curry St.	35.124	118.449	34487	487	Alluvium	nt
Temecula - 6th & Mercedes	33.496	117.149	13172	172	Alluvium	66
Twentynine Palms - Park Maint. Bldg.	34.021	116.009	22161	161	Weathered layer (1m) over granitic bedrock	nt
Van Nuys - 7-story Hotel	34.221	118.471	24386	386	Alluvium	203
Vasquez Rocks Park	34.490	118.320	24047	047	Alluvium (~3m) over hard sandstone	nt
Westmorland - Fire Station	33.037	115.623	11369	369	Alluvium	nt
Whittier - 8-story Hotel	33.975	118.036	14606	606	Shallow alluvium over sedimentary bedrock	206
Winchester - Bergman Ranch	33.640	117.094	13199	199	Weathered granitic bedrock	66
Winchester - Hidden Valley Farms	33.681	117.056	13200	200	Thin soil (1m) over schist and granitic rock	67
Winterhaven - Sheriff Substation	32.739	114.635	00022	022	Deep alluvium	nt
Wrightwood - Jackson Flat	34.381	117.737	23590	590	Hard metamorphic rock (schist)	--
Wrightwood - Nielson Ranch	34.314	117.545	23573	573	alluvium	68
Wrightwood - Swarthout Valley	34.369	117.658	23574	574	Alluvium	69
Yermo - Fire Station	34.903	116.823	22074	074	Deep alluvium	67

Footnotes:    nt    - Instrument not triggered, though operational  
                  nt#   - Instrument not triggered, probable instrument malfunction  
                  nr1   - Instrument not operational due to construction in building  
                  nr2   - No record; instrument out of media

TABLE 3 - CSMIP Strong-Motion Data - Big Bear Earthquake

Station Name	Station No.	Structure Type, Size*	Epicenter Dist. **	Trigger Time#	Max. Acceleration			Record on Pg.
					Comp.	Grnd. (g)	Struct. (g)	
Big Bear Lake Civic Center Grounds	22561	Instr. shltr. H	11	05:32.1	270 Up 360	0.51 0.21 0.57		33
Redlands 7-story Commercial Bldg.	23481	7-story steel bldg. (13 sensors)	36	05:37.6	180 Up 270	0.11 0.11 0.09	0.18 --- 0.16	101
Snow Creek	12630	Instr. shltr. H	37	05:34.3	87 Up 177	0.17 0.09 0.12		64
Redlands 1-story Warehouse	23495	1-story concrete titlt-up bldg. (12 sensors)	39	05:38±	360 Up 90	0.13 0.06 0.17	0.44 --- 0.75	97
Silent Valley Poppet Flat	12206	Instr. shltr. A	39	05:38.4	90 Up 360	0.07 0.06 0.08		65
Desert Hot Springs Fire Station	12149	1-story bldg.	40	05:38.9	90 Up 360	0.23 0.12 0.18		33
San Bernardino 2nd & Arrowhead	23522	Instr. shltr. H	44	05:37.3	270 Up 360	0.12 0.14 0.11		61
San Bernardino 9-story Commercial Bldg.	23515	9-story steel bldg. (13 sensors)	44	05:39.1	180 Up 90	0.08 0.04 0.08	0.20 --- 0.10	81
San Bernardino 6-story Hotel	23287	6-story concrete bldg. (9 sensors)	44	---	180 Up 90	0.08 0.06 0.12	0.25 --- 0.21	77
San Bernardino 1-story Commercial Bldg.	23622	1-story concrete/URM bldg. (10 sensors)	45	05:25.6	180 Up 90	0.06 0.09 0.06	0.17 --- 0.11	93
San Bernardino 3-story Office Bldg.	23516	3-story steel bldg. (13 sensors)	45	05:39.3	360 Up 270	0.09 0.06 0.13	0.40 --- 0.28	89
San Bernardino E & Hospitality	23542	Instr. shltr. H	46	05:36.8	270 Up 360	0.09 0.07 0.10		62
San Bernardino 5-story CSUSB Library	23285	5-story concrete bldg. (10 sensors)	46	---	215 Up 125	0.07 0.08 0.08	0.14 --- 0.34	73

TABLE 3 - CSMIP Strong-Motion Data (Continued)

<u>Station Name</u>	<u>Station No.</u>	<u>Structure Type, Size*</u>	<u>Epicenter Dist. **</u>	<u>Trigger Time#</u>	<u>Max. Acceleration</u>			<u>Record on Pg.</u>
					<u>Comp.</u>	<u>Grnd. (g)</u>	<u>Struct. (g)</u>	
San Bernardino 110/215 Interchange	23631	Curved concrete bridge (34 sensors)	46	---	T Up L	0.11 0.08 0.09	1.02 0.33 0.58	211
San Bernardino 5-story Hospital	23634	5-story steel bldg. (12 sensors)	46	05:37.0	2 Up 92	0.07 0.04 0.06	0.32 --- 0.18	85
Joshua Tree Fire Station	22170	1-story bldg.	48	05:42.2	90 Up 360	0.06 0.06 0.06		40
Palm Springs 4-story Hospital	12299	4-story steel bldg. (13 sensors)	48	---	360 Up 270	0.08 0.06 0.06	0.19 --- 0.18	105
Colton 1-story School Gym	23540	1-story tilt-up bldg. (13 sensors)	49	05:39.9	5 Up 95	0.04 0.05 ---	0.14 --- 0.22	125
Hesperia 4th & Palm	23583	Instr. shltr. H	50	05:37.4	90 Up 180	0.06 0.04 0.10		39
San Jacinto Valley Cemetery	12202	1-story bldg.	51	05:41.3	90 Up 360	0.05 0.04 0.07		58
Palm Springs Airport	12025	Instr. shltr. A	51	05:40.8	90 Up 360	0.09 0.10 0.09		53
Hemet 4-story Hospital	12267	4-story concrete bldg. (10 sensors)	52	---	315 Up 225	0.06 0.05 0.04	0.14 --- 0.09	129
Hemet 1-story Library	12266	1-story bldg. (6 sensors)	52	---	360 Up 270	0.06 0.09 0.07	0.15 --- 0.21	127
Hemet Stetson Ave Fire Station	12331	1-story bldg.	54	05:40.8	90 Up 360	0.08 0.09 0.12		38
Riverside 2-story Govt. Office Bldg.	13620	2-story concrete bldg. (12 sensors)	56	05:27.2	305 Up 35	--- --- ---	0.14 --- 0.30	197
Riverside 13-story Government Office Bldg.	13312	13-story steel/concrete (15 sensors)	56	---	30 Up 120	0.06 0.03 0.05	--- --- ---	--

TABLE 3 - CSMIP Strong-Motion Data (Continued)

Station Name	Station No.	Structure Type, Size*	Epicenter Dist. **	Trigger Time#	Max. Acceleration			Record on Pg.
					Comp.	Grnd. (g)	Struct. (g)	
Winchester Hidden Valley Farms	13200	Instr. shltr. A	62	05:50.3	90 Up 360	0.08 0.03 0.07		67
Palm Desert 4-story Medical Office Bldg.	12284	4-story concrete bldg. (9 sensors)	62	---	360 Up 90	0.07 0.04 0.06	0.09 --- 0.11	178
Riverside Airport	13123	1-story bldg.	64	05:43.4	270 Up 180	0.05 0.05 0.05		58
Etiwanda Power Plant	23466	Steam gener- ating plant (12 sensors)	66	05:43.6	180 Up 90	0.03 0.03 0.05	0.10 0.10 0.08	225
Winchester Bergman Ranch	13199	Instr. shltr. A	67	05:43.4	90 Up 360	0.08 0.07 0.08		66
Wrightwood Nielson Ranch	23573	Instr. shltr. H	67	05:40.2	90 Up 180	0.06 0.09 0.06		68
Lake Mathews Dike 1	13326	Earth dam (9 sensors)	69	05:44.3	75 Up 345	0.07 0.05 0.07	0.10 0.06 0.11	223
Rancho Cucamonga Deer Canyon	23598	Instr. shltr. H	69	05:41.6	90 Up 180	0.05 0.02 0.04		57
Sage Fire Station	12636	1-story bldg.	70	05:40.3	90 Up 180	0.18 0.13 0.17		59
Rancho Cucamonga Law & Justice Center Parking Lot (Chns 17-19)	23497	Instr. shltr. D	70	05:43.2	360 Up 90	0.04 0.04 0.05		112
Rancho Cucamonga Law and Justice Center	23497	4-story base- isolated bldg. (16 sensors)	70	05:43.2	360 Up 90	0.04 0.04 0.06	0.07 0.04 0.07	109
Phelan Wilson Ranch Road	23597	Instr. shltr. H	70	05:41.3	90 Up 180	0.04 0.03 0.06		55
Lake Mathews Main Dam	13313	Earth dam (6 sensors)	71	05:44.9	350 Up 260	--- --- ---	0.09 0.05 0.08	222

TABLE 3 - CSMIP Strong-Motion Data (Continued)

<u>Station Name</u>	<u>Station No.</u>	<u>Structure Type, Size*</u>	<u>Epicenter Dist. **</u>	<u>Trigger Time#</u>	<u>Max. Acceleration</u>			<u>Record on Pg.</u>
					<u>Comp.</u>	<u>Grnd. (g)</u>	<u>Struct. (g)</u>	
Murrieta Hot Springs Collins Ranch	13198	Instr. shltr. A	73	05:45.4	90 Up 360	0.07 0.04 0.05		46
Mt. Baldy Elementary School	23572	Instr. shltr. H	77	05:43.1	90 Up 180	0.05 0.02 0.04		50
Yermo Fire Station	22074	1-story bldg.	78	---	360 Up 270	0.06 0.05 0.04		67
Indio Riverside Co. Fairgrounds	12543	Instr. shltr. H	78	05:43.1	95 Up 185	0.07 0.06 0.07		41
Barstow Vineyard & H St.	23559	Instr. shltr. H	79	05:45.0	90 Up 360	0.05 0.03 0.03		34
Wrightwood Swarthout Valley	23574	Instr. shltr. H	79	05:42.0	90 Up 180	0.08 0.07 0.08		69
Lake Cahuilla	12624	Instr. shltr. H	81	05:45.2	94 Up 184	0.04 0.03 0.04		42
Indio Coachella Canal	12026	Instr. shltr. A	82	05:47.7	90 Up 360	0.05 0.04 0.06		40
Temecula 6th & Mercedes	13172	Instr. shltr. H	84	05:46.9	90 Up 360	0.05 0.03 0.04		66
Wrightwood Jackson Flat	23590	Instr. shltr. H	86	05:43.7	90 Up 180	0.02 0.02 0.02		--
Pomona 4th & Locust	23525	Instr. shltr. H	87	05:45.8	90 Up 360	0.03 0.03 0.03		56
Pomona 2-story Commercial Bldg.	23511	2-story concrete bldg. (10 sensors)	87	05:45.9	360 Up 270	0.02 0.02 0.03	0.06 ---	192
Pomona 6-story Commercial Bldg.	23544	6-story concrete/URM bldg. (12 sensors)	87	05:45.9	270 Up 180	0.03 0.02 0.03	0.13 ---	194

TABLE 3 - CSMIP Strong-Motion Data (Continued)

<u>Station Name</u>	<u>Station No.</u>	<u>Structure Type, Size*</u>	<u>Epicenter Dist. **</u>	<u>Trigger Time#</u>	<u>Max. Acceleration</u>			<u>Record on Pg.</u>
					<u>Comp.</u>	<u>Grnd. (g)</u>	<u>Struct. (g)</u>	
Featherly Park Park Maint. Bldg.	13122	1-story bldg.	90	---	90 Up 360	0.03 0.03 0.04		38
Big Dalton Reservoir Big Dalton Dam	23247	Concrete dam (9 sensors)	91	05:51.3	20 Up 110	--- --- ---	0.04 0.02 0.03	--
Puddingstone Reservoir Puddingstone Dam	23328	Earth dam (15 sensors)	91	05:47.5	333 Up 243	0.02 0.02 0.03	--- --- ---	--
Palmdale Black Butte	23585	Instr. shltr. H	93	05:50.1	90 Up 180	0.02 0.01 0.03		--
Palomar Mountain Palomar Observatory	12330	Seismic vault	94	05:49.1	90 Up 360	0.02 0.03 0.03		--
Puerta La Cruz USFS Storage Bldg.	12168	1-story bldg.	98	05:48.3	90 Up 360	0.07 0.05 0.07		56
Pearblossom Pallet Creek	23584	Instr. shltr. H	104	05:47.0	90 Up 180	0.04 0.02 0.03		54
Cogswell Reservoir Cogswell Dam	23210	Earth dam (9 sensors)	105	05:49.3	155 Up 65	0.03 0.02 0.04	0.07 0.05 0.10	219
Mecca CVWD Yard	11625	Instr. shltr. H	105	05:47.7	90 Up 180	0.07 0.03 0.07		49
Amboy	21081	1-story bldg.	107	05:53.9	90 Up 360	0.05 0.03 0.05		34
Desert Shores	12626	Instr. shltr. H	111	---	90 Up 180	0.05 0.03 0.05		36
Littlerock Brainard Canyon	23595	Instr. shltr. H	111	05:48.6	90 Up 180	0.02 0.02 0.02		--
Whittier 8-story Hotel	14606	8-story reinf. masonry bldg. (12 sensors)	114	05:49.2	360 Up 90	0.04 0.03 0.03	0.10 --- 0.11	206

TABLE 3 - CSMIP Strong-Motion Data (Continued)

<u>Station Name</u>	<u>Station No.</u>	<u>Structure Type, Size*</u>	<u>Epicenter Dist. **</u>	<u>Trigger Time#</u>	<u>Max. Acceleration</u>			<u>Record on Pg.</u>
					<u>Comp.</u>	<u>Grnd. (g)</u>	<u>Struct. (g)</u>	
North Shore Salton Sea State Park HQ	11613	Instr. shltr. H	115	05:49.4	90 Up 180	0.09 0.04 0.08		52
Boron Fire Station	33083	1-story bldg.	116	---	90 Up 360	0.04 0.03 0.03		35
Newport Beach Irvine Ave. Fire Station	13160	1-story bldg.	118	---	90 Up 360	0.06 0.02 0.04		53
Fort Irwin	24577	Instr. shltr. H	119	05:52.8	90 Up 360	0.02 0.02 0.02		--
Newport Beach 11-story Hospital	13589	11-story concrete bldg. (18 sensors)	121	05:51.8	335 Up 65	0.06 0.03 0.04	0.13 0.03 0.16	175
San Marino Southwestern Academy	24401	1-story bldg.	121	05:53.3	90 Up 360	0.03 0.02 0.03		--
Pasadena 9-story Commercial Bldg.	24571	9-story concrete bldg. (15 sensors)	122	05:51.5	90 Up 180	0.04 --- ---	0.05 --- 0.10	183
Pasadena 12-story Commercial/ Office Bldg.	24546	12-story steel bldg. (15 sensors)	122	05:50.3	360 Up 270	--- --- ---	0.06 --- 0.07	186
Pasadena 6-story Office Bldg.	24541	6-story steel/URM bldg. (16 sensors)	122	05:52.1	90 Up 360	0.05 0.03 0.03	0.05 --- 0.06	180
Pasadena 12-story Office Bldg.	24566	12-story steel bldg. (15 sensors)	122	05:50.4	180 Up 270	0.04 0.06 0.05	0.06 --- 0.16	189
Alhambra Fremont School	24461	1-story bldg.	123	06:10.8	90 Up 360	0.03 0.01 0.02		--
Los Angeles 8-story CSULA Admin. Bldg.	24468	8-story concrete bldg. (16 sensors)	125	---	180 Up 90	0.03 0.02 0.02	0.06 0.04 0.03	147
Los Angeles City Terrace	24592	Instr. shltr. H	125	05:50.5	90 Up 180	0.04 0.03 0.06		45

TABLE 3 - CSMIP Strong-Motion Data (Continued)

Station Name	Station No.	Structure Type,Size*	Epicenter Dist.**	Trigger Time#	Max. Acceleration			Record on Pg.
					Comp.	Grnd. (g)	Struct. (g)	
Los Angeles 2-story Fire Command Control Bldg.	24580	2-story isolated steel bldg. (16 sensors)	125	05:50.9	40 Up 310	0.05 0.03 0.04	0.05 0.05 0.04	139
Los Angeles Obregon Park	24400	1-story bldg.	126	06:05.2	90 Up 360	0.04 0.02 0.04		46
Seal Beach 8-story Office Bldg.	14578	8-story isolated concrete bldg. (28 sensors)	126	---	90 Up 360	0.04 0.02 0.04	0.06 0.07 0.08	113
Seal Beach 8-story Office Bldg. Parking Lot	14578	Instr. shltr. H	126	---	90 Up 360	0.04 0.02 0.04		63
North Shore Durmid	11591	Instr. shltr. H	127	05:51.2	90 Up 180	0.05 0.04 0.06		51
Los Angeles University Hospital Free Field	24605	Instr. shltr. D	127	---	5 Up 95	0.06 0.02 0.03		48
Palmdale 4-story Hotel	24232	4-story reinf. masonry bldg. (9 sensors)	127	---	140 Up 50	0.03 0.01 0.03	0.06 0.02 0.04	--
Palmdale Hwy 14 & Palmdale Blvd	24521	Instr. shltr. H	127	05:51.8	272 Up 2	0.02 0.01 0.03		--
Los Angeles 7-story University Hospital	24605	7-story isolated steel bldg. (24 sensors)	127	---	5 Up 95	0.05 0.02 0.02	0.06 0.02 0.06	142
Downey County Maint. Bldg.	14368	1-story bldg.	128	---	90 Up 360	0.05 0.02 0.04		35
Salton City	11628	Instr. shltr. H	129	05:51.4	90 Up 180	0.09 0.03 0.05		60
Long Beach Recreation Park	14241	Instr. shltr. H	130	05:59.4	90 Up 360	0.03 0.01 0.02		--
Los Angeles Temple & Hope	24611	Instr. shltr. H	132	05:52.8	90 Up 180	0.02 0.02 0.04		47

TABLE 3 - CSMIP Strong-Motion Data (Continued)

Station Name	Station No.	Structure Type, Size*	Epicenter Dist.**	Trigger Time#	Max. Acceleration			Record on Pg.
					Comp.	Grnd. (g)	Struct. (g)	
Los Angeles 17-story Residential Bldg.	24601	17-story concrete bldg. (14 sensors)	132	05:52.3	220	0.03	0.13	162
					Up	0.02	---	
					130	0.04	0.17	
Los Angeles 15-story Government Office Bldg.	24569	15-story steel bldg. (15 sensors)	132	05:52.1	43	0.03	0.06	159
					Up	0.01	---	
					313	0.02	0.05	
Long Beach Rancho Los Cerritos	14242	Instr. shltr. H	133	---	90	0.03		43
					Up	0.02		
					360	0.02		
Anaverde Valley City Ranch	24576	Instr. shltr. H	133	05:51.6	90	0.01		--
					Up	0.01		
					180	0.02		
Los Angeles 52-story Office Bldg.	24602	52-story steel bldg. (20 sensors)	133	05:52.0	355	0.03	0.10	165
					Up	0.01	---	
					85	0.03	0.10	
Los Angeles 12-story Commercial/Office Bldg.	24581	12-story concrete/URM bldg. (16 sensors)	133	05:52.5	40	0.03	0.06	153
					Up	0.02	---	
					130	0.03	0.04	
Los Angeles 54-story Office Bldg.	24629	54-story steel bldg. (20 sensors)	133	05:51.8	40	0.03	0.07	170
					Up	0.02	---	
					130	0.03	0.06	
Lancaster 3-story Office Bldg.	24517	3-story reinf. masonry bldg. (13 sensors)	134	05:56.2	115	0.03	0.09	133
					Up	0.02	---	
					25	0.03	0.03	
Los Angeles 9-story Office Bldg.	24579	9-story concrete/URM bldg. (18 sensors)	134	05:52.5	40	0.03	0.18	150
					Up	0.02	---	
					310	0.03	0.16	
Lancaster 5-story Hospital	24609	5-story steel bldg. (12 sensors)	134	05:53.2	25	0.03	0.09	130
					Up	0.01	---	
					295	0.03	0.15	
Los Angeles Pico & Sentous	24612	Instr. shltr. H	134	05:53.2	90	0.02		--
					Up	0.01		
					180	0.02		
Long Beach 15-story Government Office Bldg.	14533	15-story steel bldg. (16 sensors)	135	05:59.7	135	0.02	0.02	--
					Up	0.01	0.02	
					45	0.02	0.03	
Long Beach City Hall Grounds	14560	Instr. shltr. H	135	06:01.5	90	0.02		--
					Up	0.01		
					360	0.02		

TABLE 3 - CSMIP Strong-Motion Data (Continued)

Station Name	Station No.	Structure Type, Size*	Epicenter Dist. **	Trigger Time#	Max. Acceleration			Record on Pg.
					Comp.	Grnd. (g)	Struct. (g)	
Los Angeles 116th St. School	14403	1-story bldg.	136	05:55.9	90 Up 360	0.03 0.02 0.03		--
Long Beach 7-story Office Bldg.	14323	7-story steel bldg. (18 sensors)	136	06:13.2	90 Up 360	0.02 0.01 0.02	0.06 --- 0.07	134
Burbank 6-story Commercial Bldg.	24370	6-story steel Bldg. (13 sensors)	137	---	135 Up 45	0.04 0.01 0.02	0.07 --- 0.11	119
Burbank 10-story Residential Bldg.	24385	10-story concrete bldg. (16 sensors)	137	---	45 Up 315	0.02 0.01 0.03	0.07 --- 0.10	122
Leona Valley #5 Ritter Ranch	24055	Instr. shltr. H	137	06:00.3	90 Up 360	0.03 0.02 0.03		43
Leona Valley #4	24308	Instr. shltr. H	137	06:19.5	90 Up 360	0.02 0.01 0.02		--
Baker Fire Station	32075	1-story bldg.	138	06:14.6	140 Up 50	0.04 0.02 0.02		--
Inglewood Union Oil Yard	14196	Instr. shltr. A	138	06:00.6	90 Up 360	0.03 0.02 0.03		--
Los Angeles Hollywood Storage Bldg.	24236	14-story concrete bldg. (12 sensors)	140	---	90 Up 360	0.03 0.02 0.03	0.08 --- 0.09	156
Los Angeles Hollywood Storage Bldg. FF	24303	Instr. shltr. H	140	05:57.2	90 Up 360	0.03 0.01 0.03		44
Lancaster Fox Airfield Airport Control Tower	24474	Control Tower (9 sensors)	141	05:56.1	60 Up 330	0.02 0.02 0.02	0.06 --- 0.09	227
Lancaster Fox Airfield Grounds	24475	Instr. shltr. H	141	05:56.5	90 Up 360	0.02 0.01 0.03		--
Pacoima Kagel Canyon Fire Sta. #74	24088	1-story bldg.	143	05:56.6	90 Up 360	0.03 0.02 0.02		--

TABLE 3 - CSMIP Strong-Motion Data (Continued)

<u>Station Name</u>	<u>Station No.</u>	<u>Structure Type, Size*</u>	<u>Epicenter Dist. **</u>	<u>Trigger Time#</u>	<u>Max. Acceleration</u>			<u>Record on Pg.</u>
					<u>Comp.</u>	<u>Grnd. (g)</u>	<u>Struct. (g)</u>	
Los Angeles Baldwin Hills	24157	Instr. shltr. A	143	05:57.1	90 Up 360	0.04 0.02 0.04		44
Rosamond Airport	24092	1-story bldg.	147	---	90 Up 360	0.02 0.01 0.02		--
Mojave Hwy 14 & Backus Rd	24269	Instr. shltr. H	148	06:15.5	90 Up 360	0.03 0.01 0.04		--
Arleta Nordhoff Ave Fire Sta.	24087	1-story bldg.	149	---	90 Up 360	0.02 0.02 0.02		--
Rosamond Godde Ranch	24274	Instr. shltr. H	149	06:24.6	90 Up 360	0.02 0.02 0.02		--
Sylmar 6-story County Hospital Parking Lot	24514	Small 1-story bldg.	150	05:57.2	356 Up 86	0.04 0.01 0.02		--
Sylmar 6-story County Hospital	24514	6-story steel/ concrete bldg. (13 sensors)	150	---	356 Up 86	0.02 0.02 0.03	0.05 --- 0.05	--
Van Nuys 7-story Hotel	24386	7-story concrete bldg. (16 sensors)	152	---	360 Up 270	0.02 0.01 0.03	0.06 --- 0.06	203
Elizabeth Lake	24575	Instr. shltr. H	152	05:55.4	90 Up 180	0.03 0.01 0.03		37
Lake Hughes #1 Fire Station #78	24271	1-story bldg.	156	06:06.1	90 Up 360	0.02 0.01 0.02		--
Tarzana Cedar Hill Nursery	24436	Instr. shltr. H	157	06:00.8	90 Up 360	0.03 0.01 0.05		65
Lake Hughes 12A	24607	Instr. shltr. H	165	06:17.4	90 Up 180	0.01 0.01 0.02		--
San Diego 19-story Commercial Bldg.	03603	19-story steel bldg. (16 sensors)	168	06:01.4	90 Up 360	0.02 0.01 0.02	0.05 --- 0.07	200

TABLE 3 - CSMIP Strong-Motion Data (Continued)

<u>Station Name</u>	<u>Station No.</u>	<u>Structure Type,Size*</u>	<u>Epicenter Dist.**</u>	<u>Trigger Time#</u>	<u>Max. Acceleration</u>			<u>Record on Pg.</u>
					<u>Comp.</u>	<u>Grnd. (g)</u>	<u>Struct. (g)</u>	
Neenach Sacatara Creek	24586	Instr. shltr. H	173	05:59.0	90	0.02		--
					Up	0.02		
					180	0.02		
Lake Piru Santa Felicia Dam	24280	Earth dam (6 sensors)	180	06:03.1	90	0.04	---	--
					Up	0.02	---	
					360	0.02	---	

-----  
Footnotes:

\* - Instrument shelter types:

Instr. shltr. A - small prefabricated metal building

Instr. shltr. D - small metal box

Instr. shltr. H - small fiberglass shelter

\*\* - Distance (in km) relative to the presently estimated (USGS, CIT) epicenter at 34.201N, 116.826W.

# - Accelerograph trigger time, when present, is in minutes and seconds after 15:00:00 UTC on 28 June 1992.



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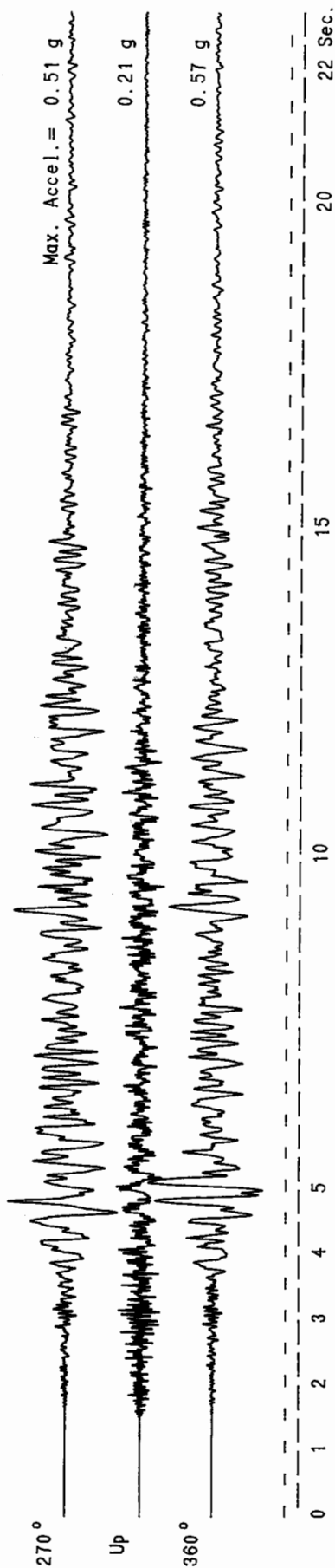
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Big Bear Lake - Civic Center Grounds  
(CSMIP Station 22561)

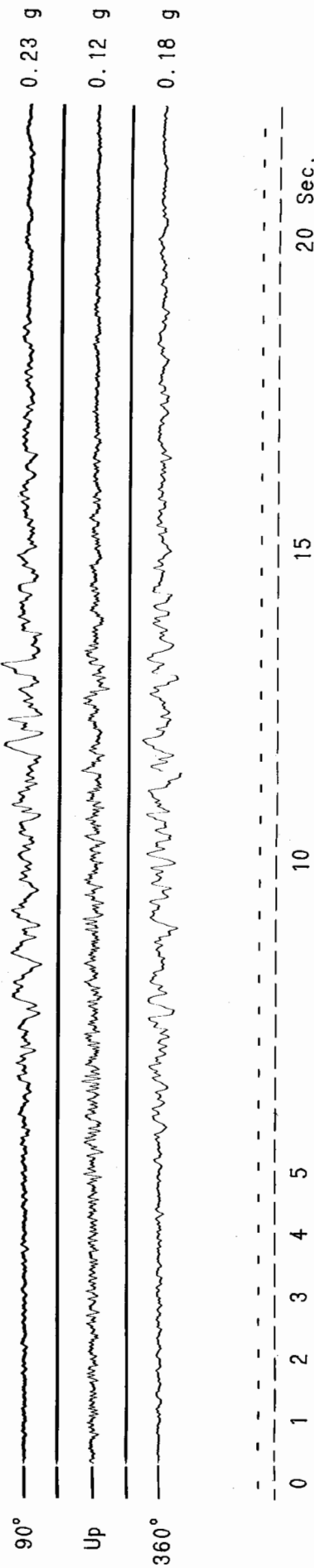
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Desert Hot Springs - Fire Station  
(CSMIP Station 12149)

Record 12149-S1832-92180.08

Max.  
Accel.



Amboy  
(CSMIP Station 21081)

Record 21081-S1569-92189.04

Max.  
Accel.

0.05 g

90°

0.03 g

Up

0.05 g

360°

20 Sec.

15

10

5

4

3

2

0

Barstow - Vineyard & H St.  
(CSMIP Station 23559)

Record 23559-S0756-92189.03

Max.  
Accel.

0.05 g

90°

0.03 g

Up

0.03 g

360°

20 Sec.

15

10

5

4

3

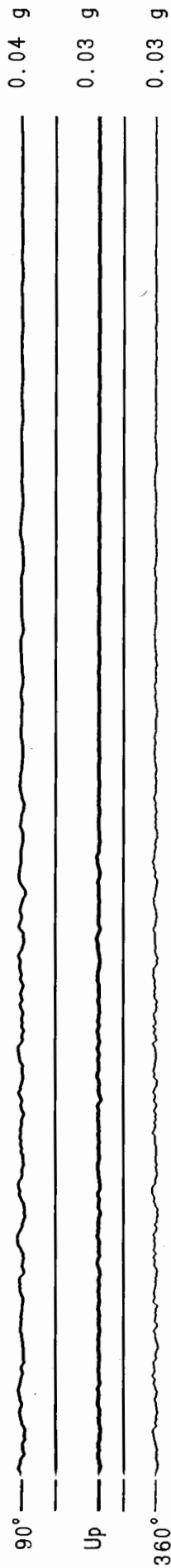
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Boron - Fire Station  
(CSMIP Station 33083)

Record 33083-S1599-92189.03

Max.  
Accel.

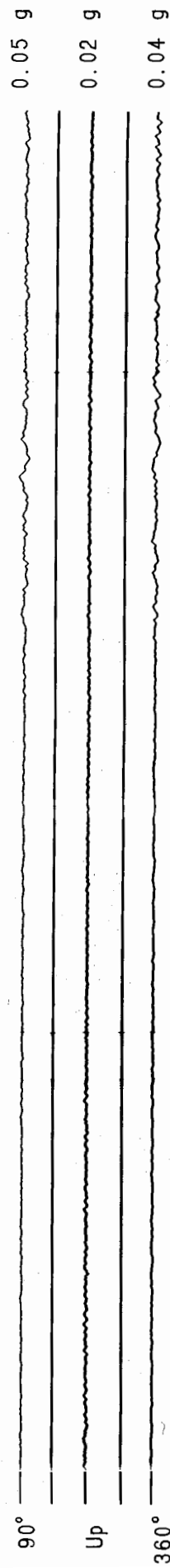


0 1 2 3 4 5 10 15 20 Sec.

Downey - County Maint. Bldg.  
(CSMIP Station 14368)

Record 14368-S1607-92191.03

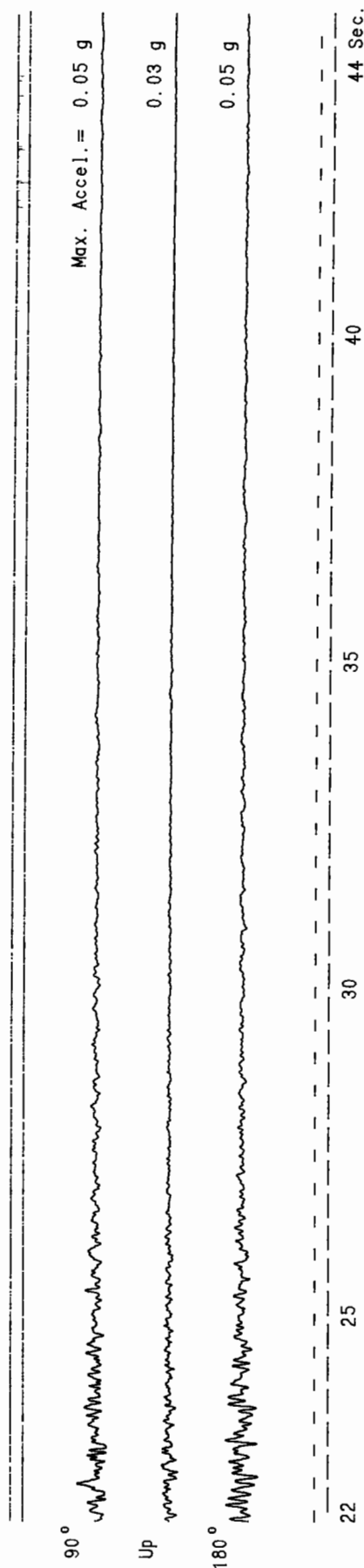
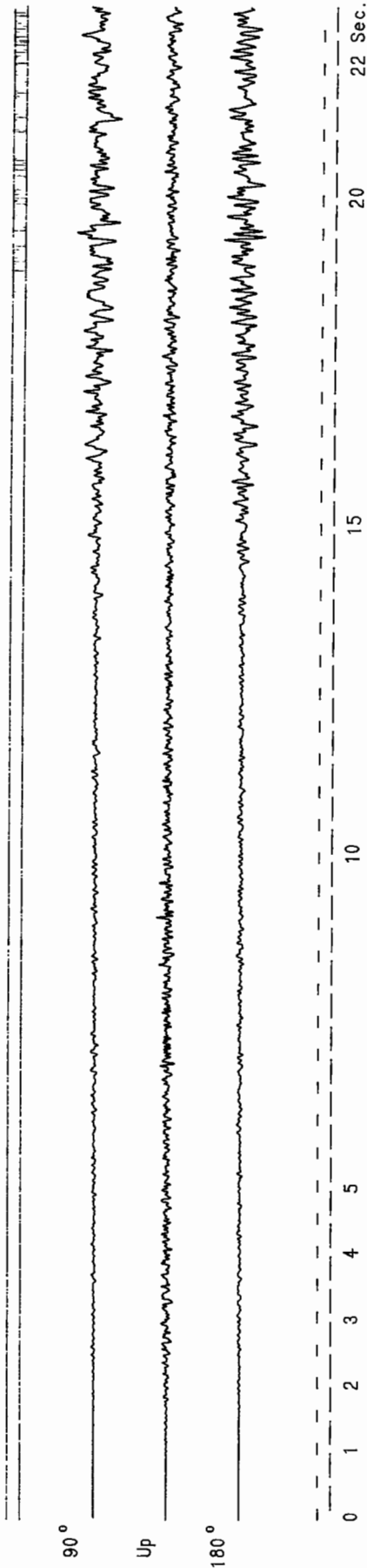
Max.  
Accel.



0 1 2 3 4 5 10 15 20 Sec.

Desert Shores  
(CSMIP Station 12626)

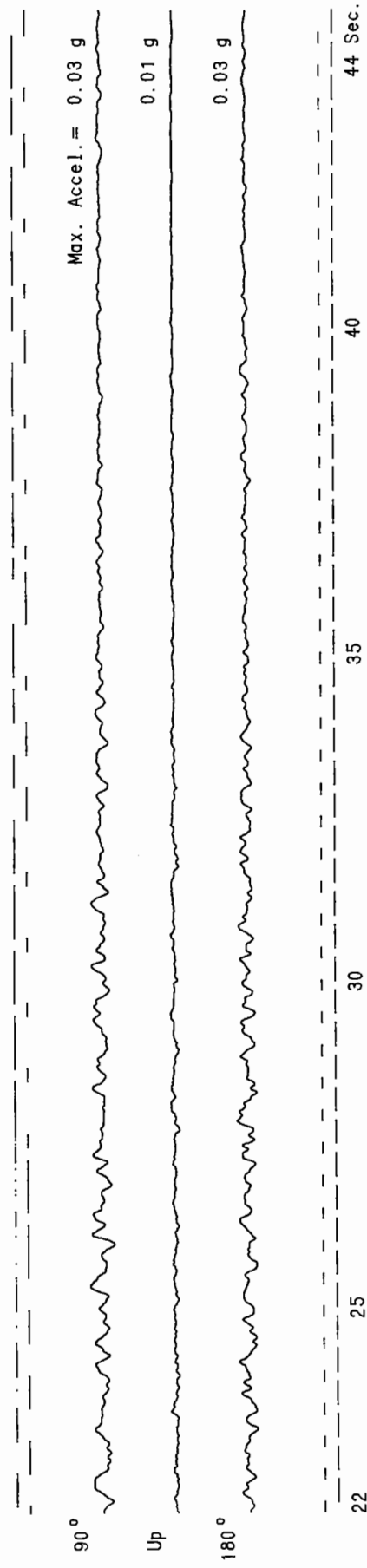
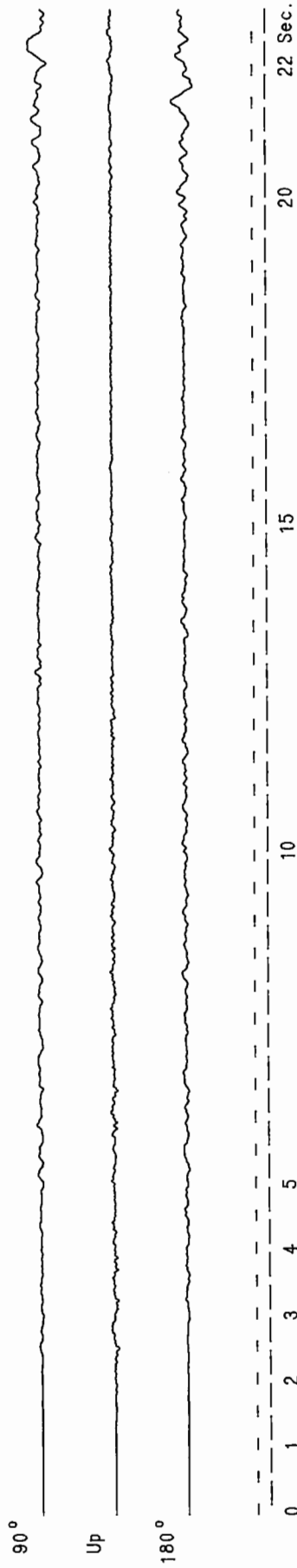
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Elizabeth Lake  
(CSMIP Station 24575)

RECORD 24575-E0409-92191.06

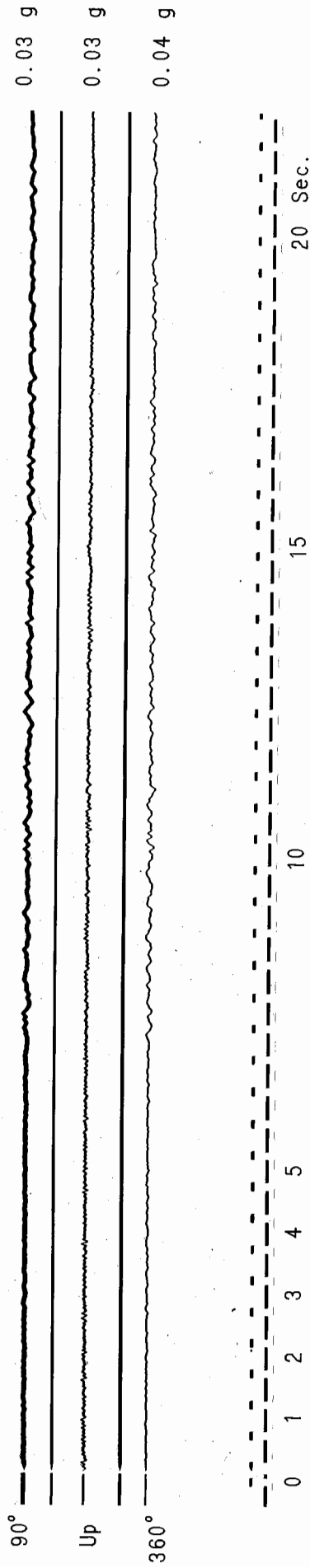


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Featherly Park - Park Maint. Bldg.  
(CSMIP Station 13122)

Record 13122-S1596-92185.03

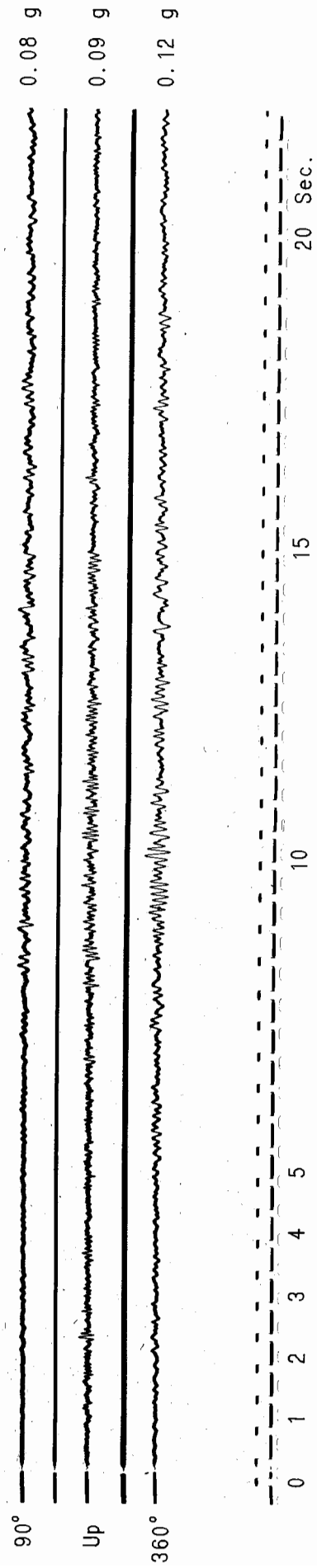
Max.  
Accel.



Hemet - Stetson Ave Fire Station  
(CSMIP Station 12331)

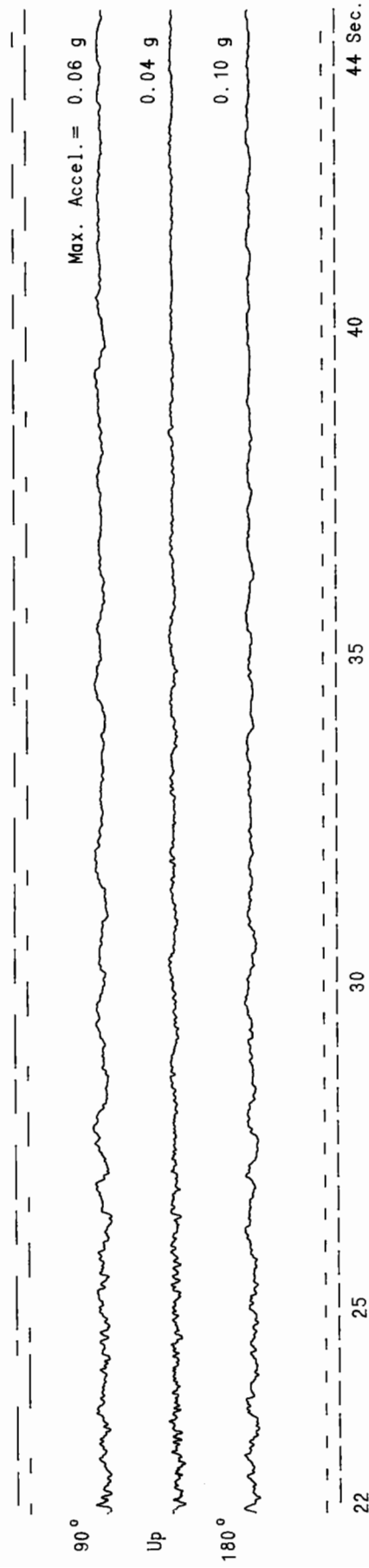
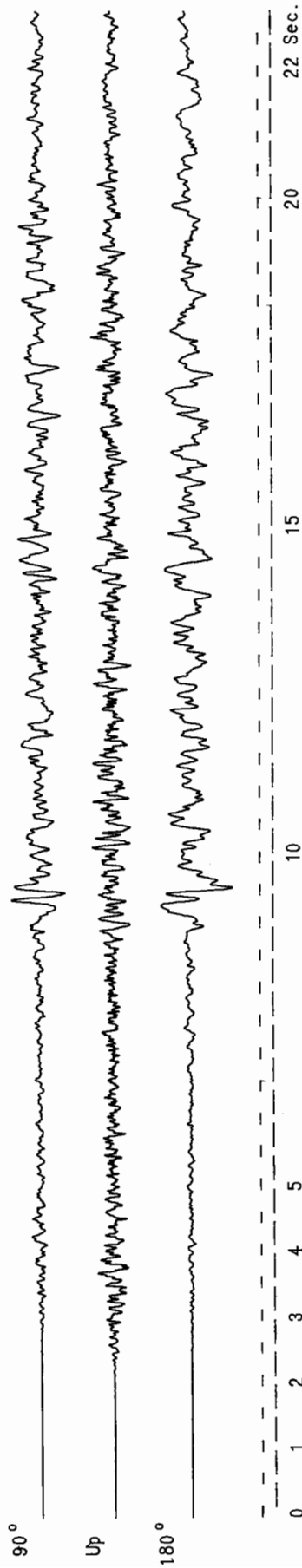
Record 12331-S2572-92183.06

Max.  
Accel.



Hesperia - 4th & Palm  
(CSMIP Station 23583)

RECORD 23583-E0245-92183.06

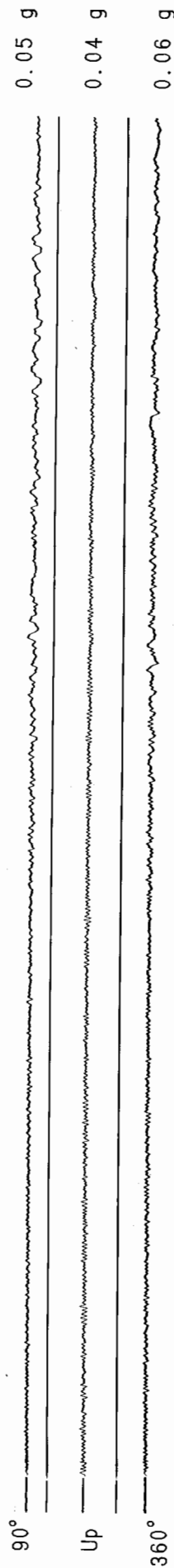


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Indio -- Coachella Canal  
(CSMIP Station 12026)

Record 12026-S1839-92180.04

Max.  
Accel.

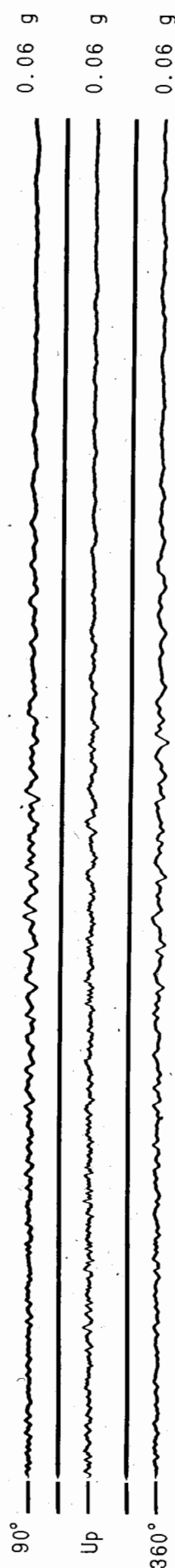


0 1 2 3 4 5 10 15 20 Sec.

Joshua Tree -- Fire Station  
(CSMIP Station 22170)

Record 22170-S1612-92180.09

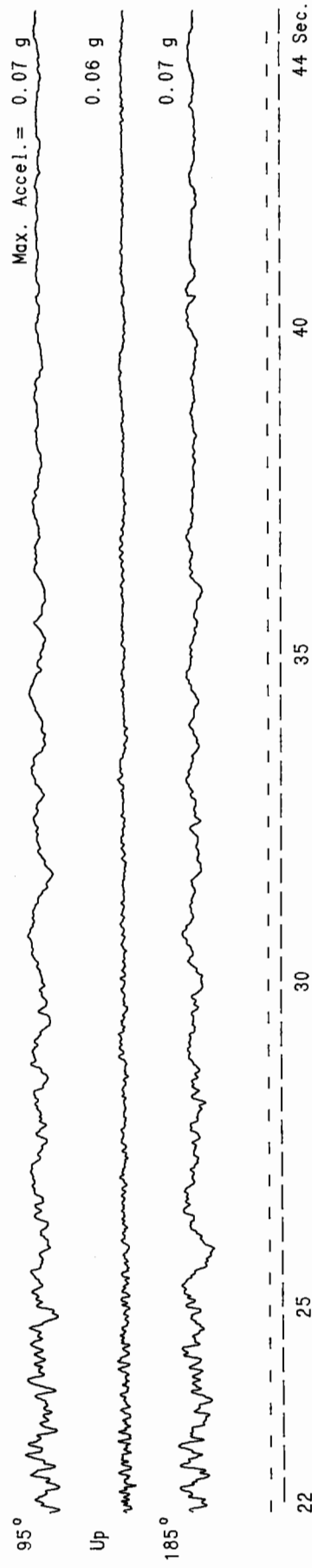
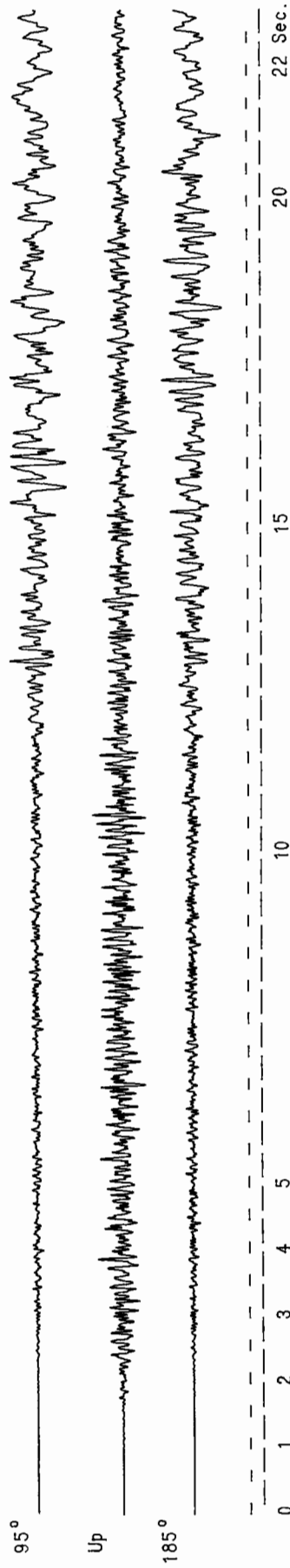
Max.  
Accel.



0 1 2 3 4 5 10 15 20 Sec.

Indio - Riverside Co. Fairgrounds  
(CSMIP Station 12543)

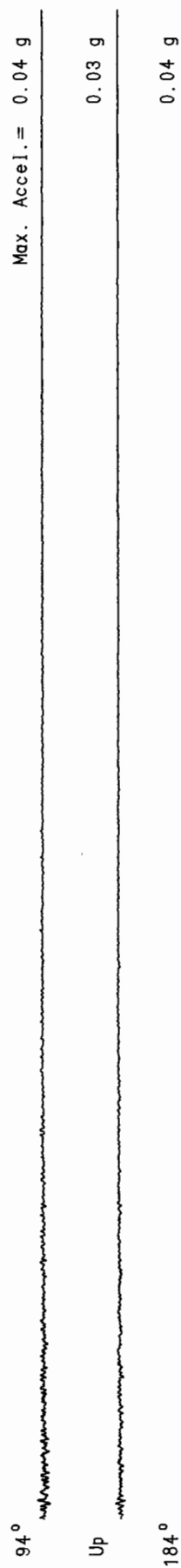
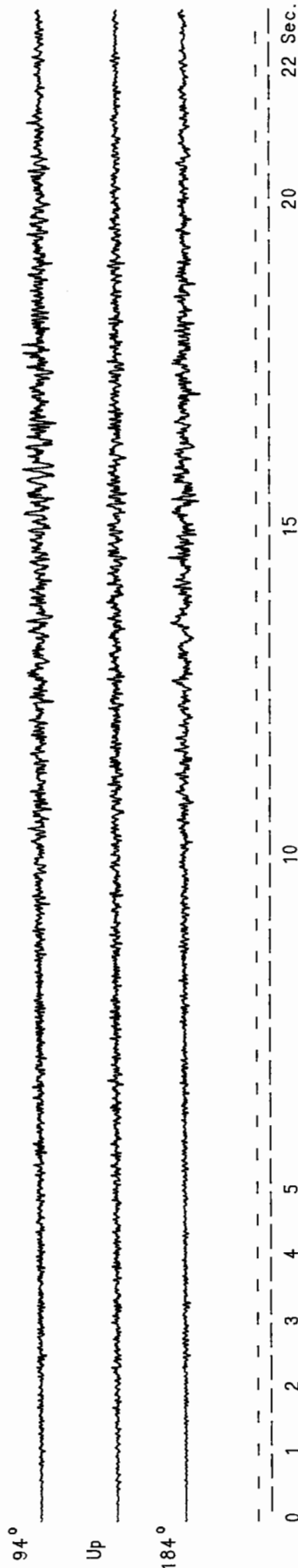
RECORD 12543-D0271-92181.10



This page plotted with 4.0x vertical exaggeration.

Lake Cahuilla  
(CSMIP Station 12624)

RECORD 12624-E0548-92180.08



This page plotted with 4.0x vertical exaggeration.

Leona Valley #5 - Ritter Ranch  
(CSMIP Station 24055)

Record 24055-S1853-92190.03

Max.  
Accel.

0.03 g

0.02 g

0.03 g

90°

Up

360°



Long Beach - Rancho Los Cerritos  
(CSMIP Station 14242)

Record 14242-S2491-92191.03

Max.  
Accel.

0.03 g

0.02 g

0.02 g

90°

Up

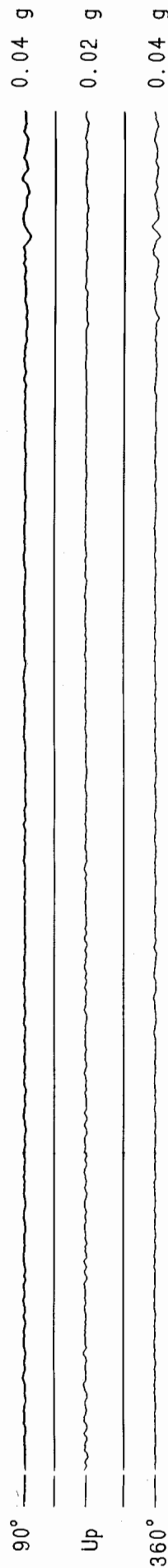
360°



Los Angeles - Baldwin Hills  
(CSMIP Station 24157)

Record 24157-S1687-92197.03

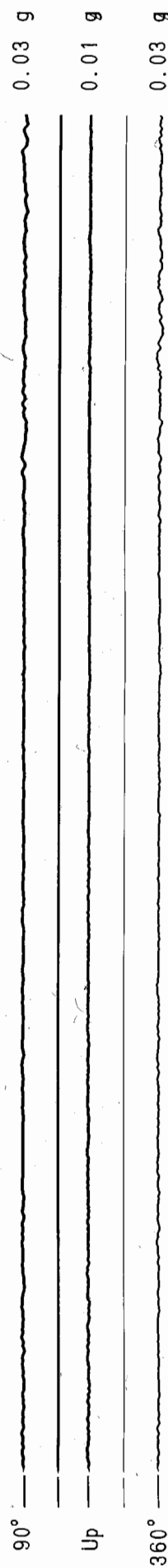
Max.  
Accel.



Los Angeles - Hollywood Storage Bldg. FF  
(CSMIP Station 24303)

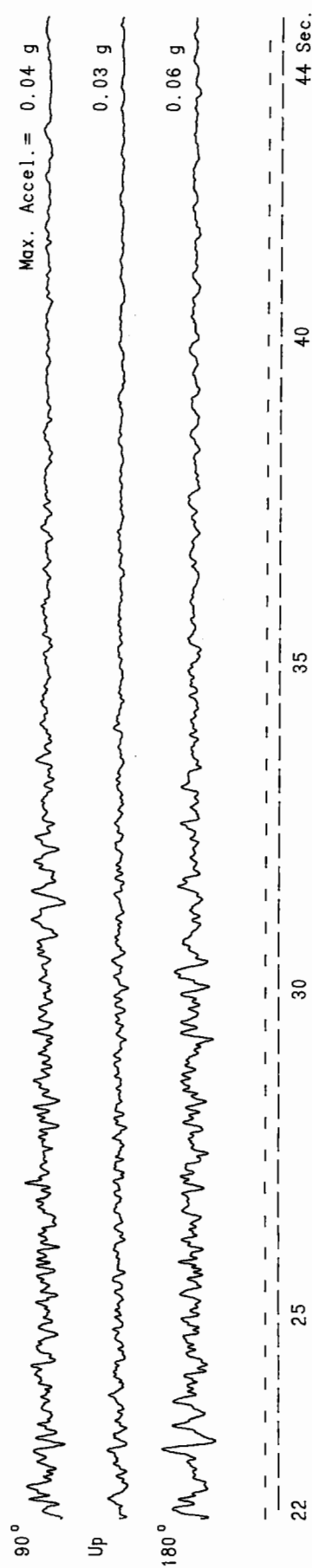
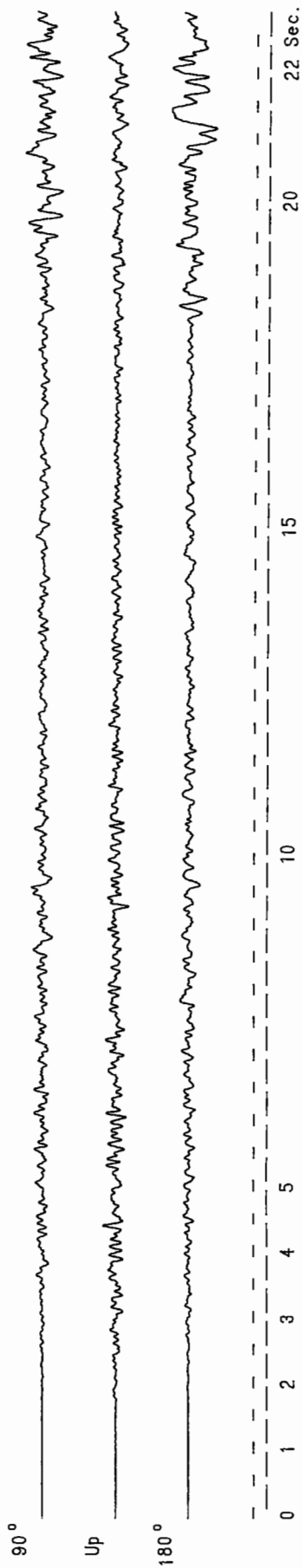
Record 24303-S2774-92191.03

Max.  
Accel.



Los Angeles - City Terrace  
(CSMIP Station 24592)

RECORD 24592-E0248-92183.10

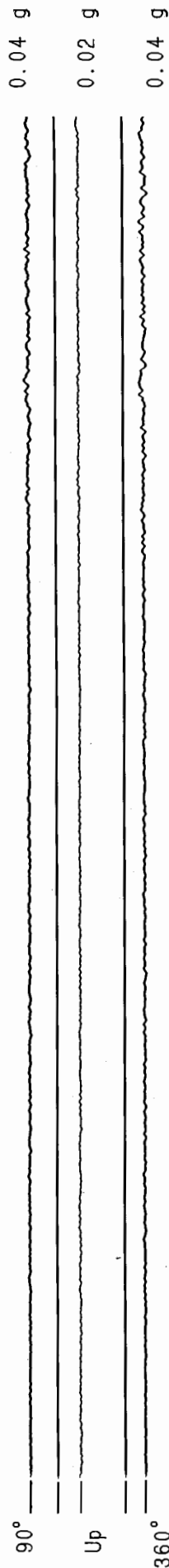


This page plotted with 4.0x vertical exaggeration.

Los Angeles - Obregon Park  
(CSMIP Station 24400)

Record 24400-S1606-92189.03

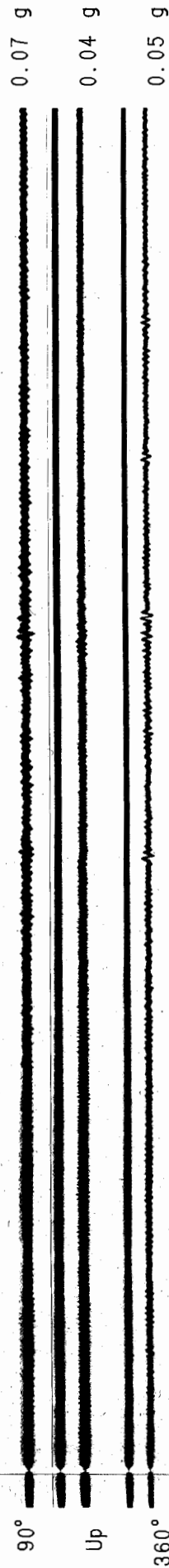
Max.  
Accel.



Murrieta Hot Springs - Collins Ranch  
(CSMIP Station 13198)

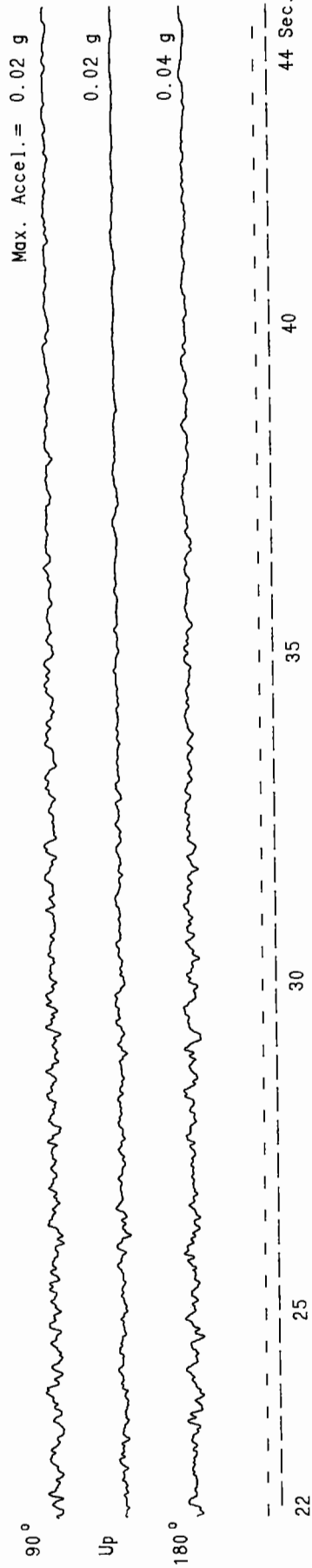
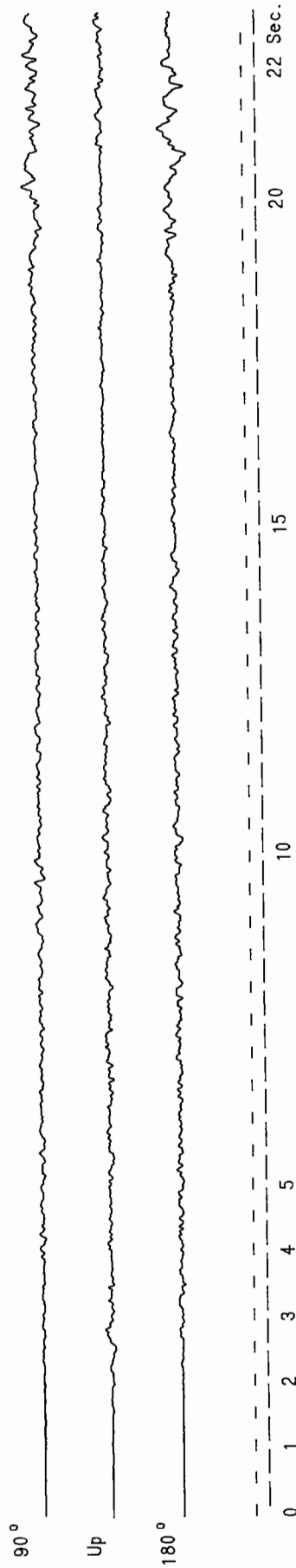
Record 13198-S1873-92184.03

Max.  
Accel.



Los Angeles - Temple & Hope  
(CSMIP Station 24611)

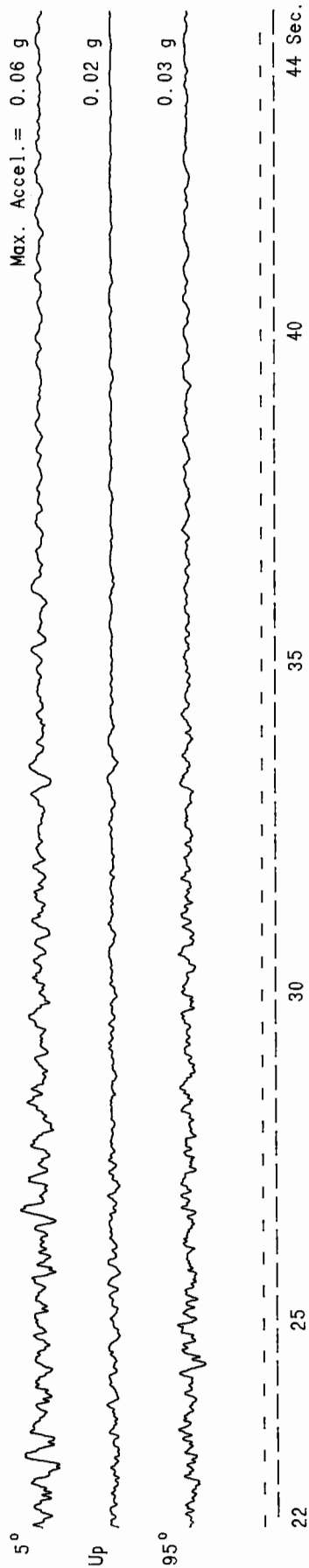
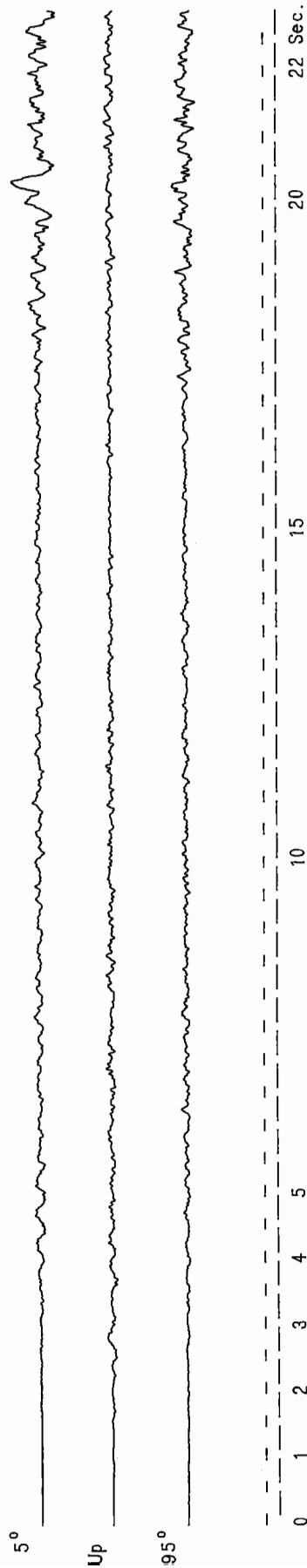
RECORD 24611-E0275-92184.05



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Los Angeles - University Hospital Free Field  
(CSMIP Station 24605)

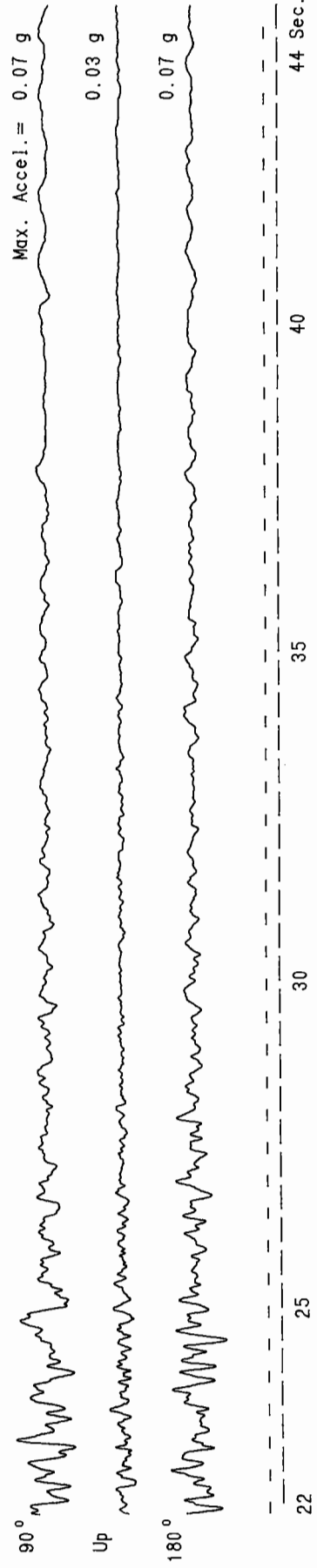
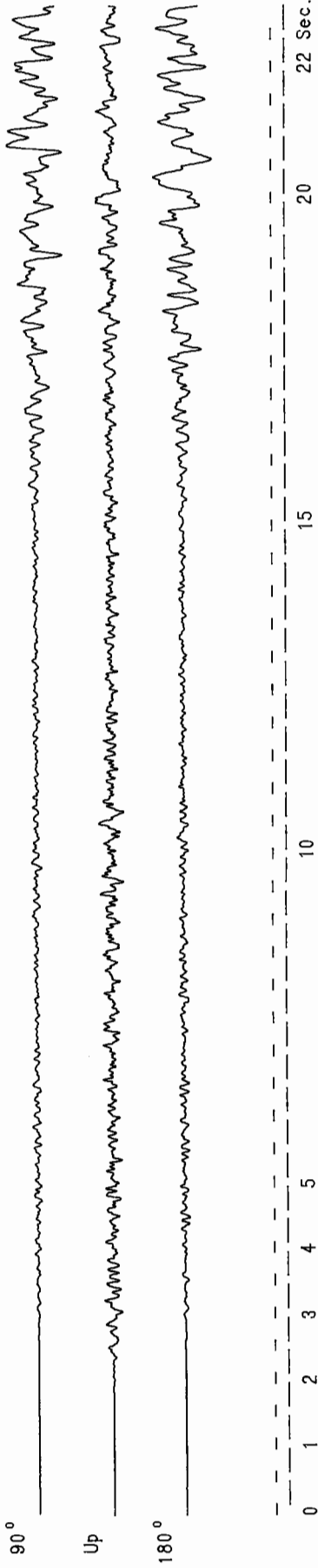
RECORD 24605-CS115-92184.06



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Mecca - CVWD Yard  
(CSMIP Station 11625)

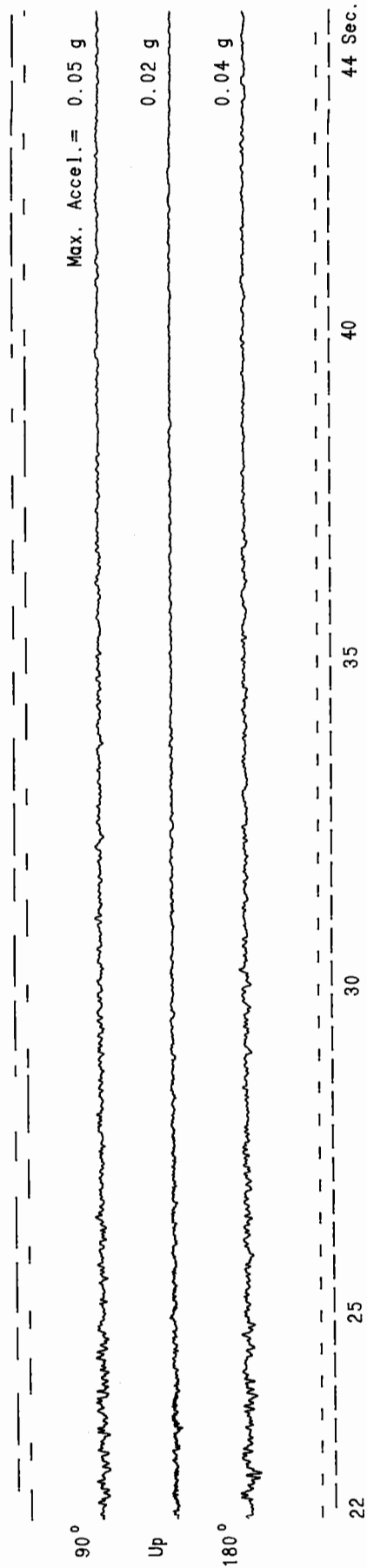
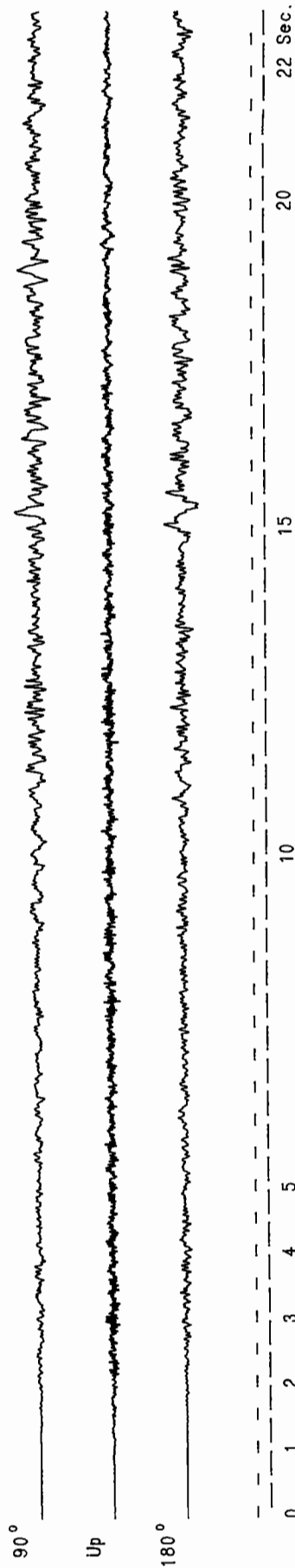
RECORD 11625-E0547-92181.16



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Mt. Baldy - Elementary School  
(CSMIP Station 23572)

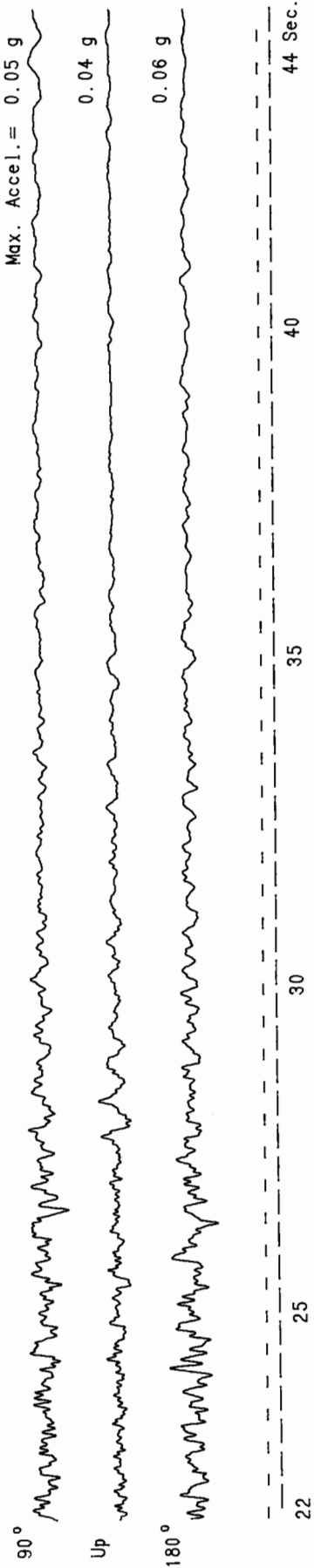
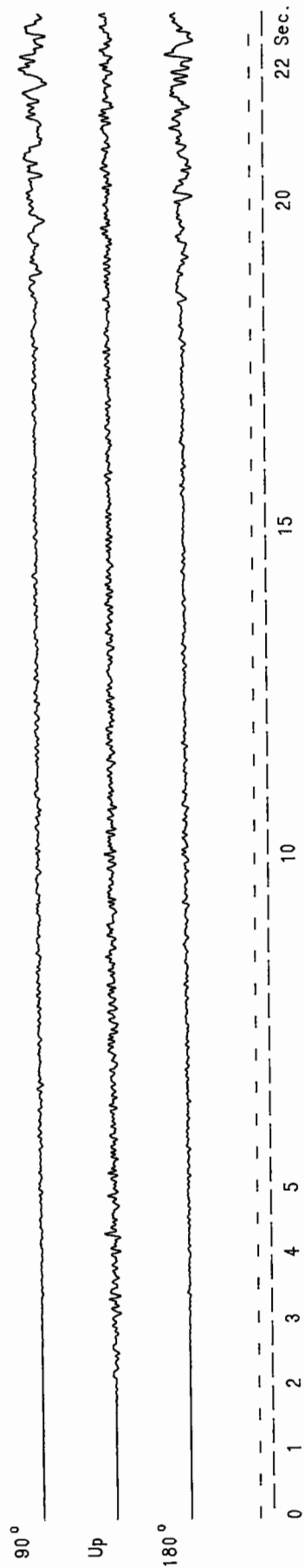
RECORD 23572-E0412-92183.17



This page plotted with 4.0x vertical exaggeration.

North Shore - Durmid  
(CSMIP Station 11591)

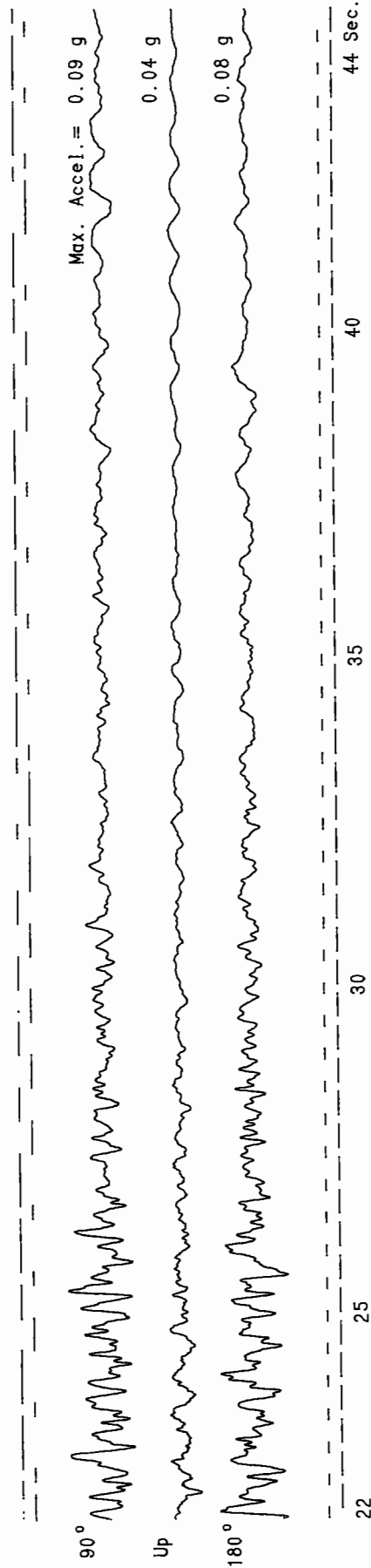
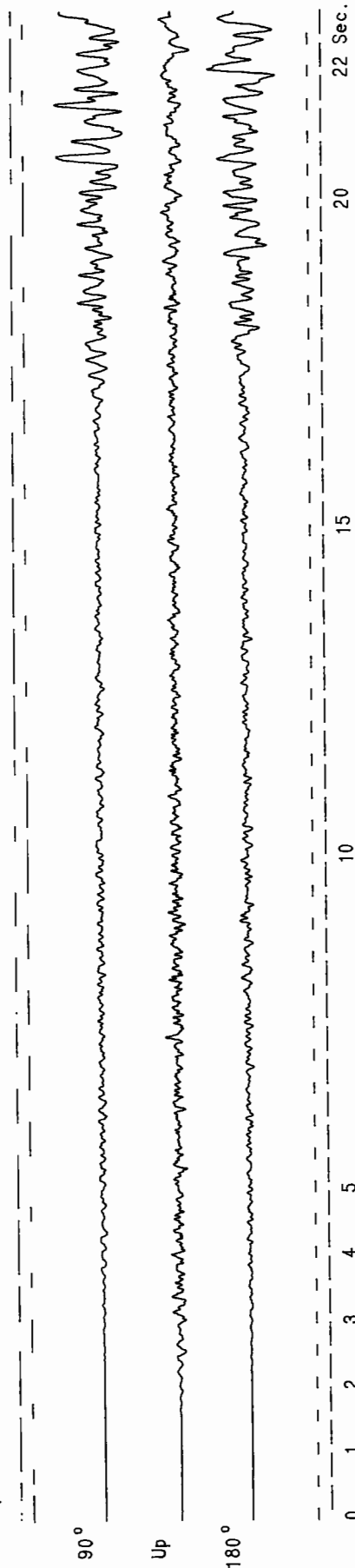
RECORD 11591-E0273-92182.12



This page plotted with 4.0x vertical exaggeration.

North Shore - Salton Sea State Park HQ  
(CSMIP Station 11613)

RECORD 11613-E0279-92182.22



This page plotted with 4.0x vertical exaggeration.

Newport Beach - Irvine Ave. Fire Station  
(CSMIP Station 13160)

Record 13160-S1690-92184.03

Max.  
Accel.

0.06 g

0.02 g

0.04 g

90°

Up

360°

0 1 2 3 4 5 10 15 20 Sec.

Palm Springs - Airport  
(CSMIP Station 12025)

Record 12025-S1833-92180.08

Max.  
Accel.

0.09 g

0.10 g

0.09 g

90°

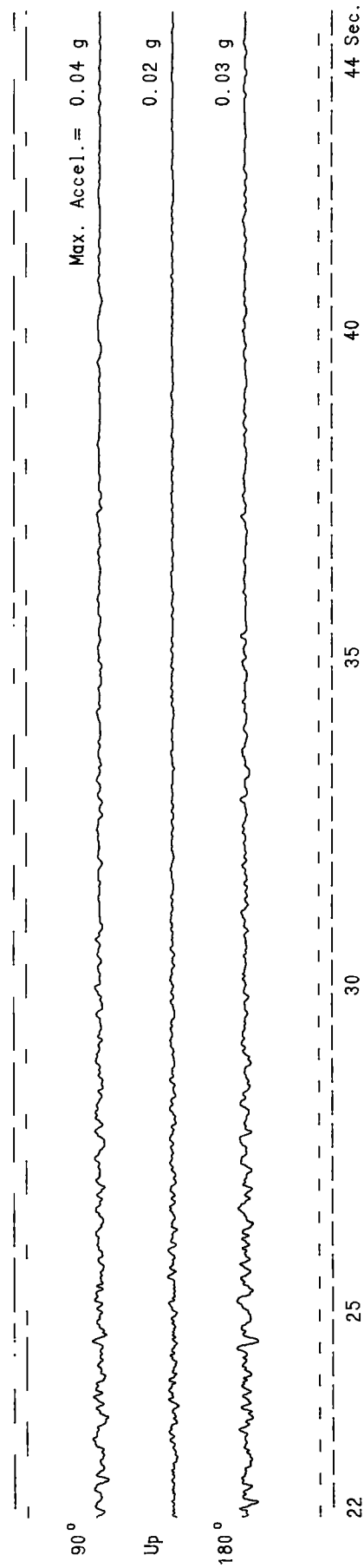
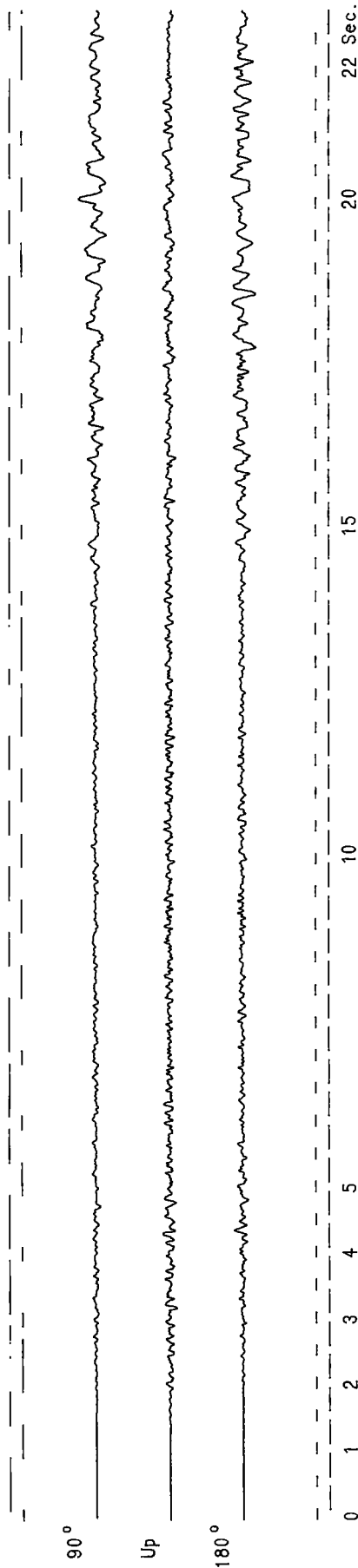
Up

360°

0 1 2 3 4 5 10 15 20 Sec.

Pearblossom - Pallet Creek  
(CSMIP Station 23584)

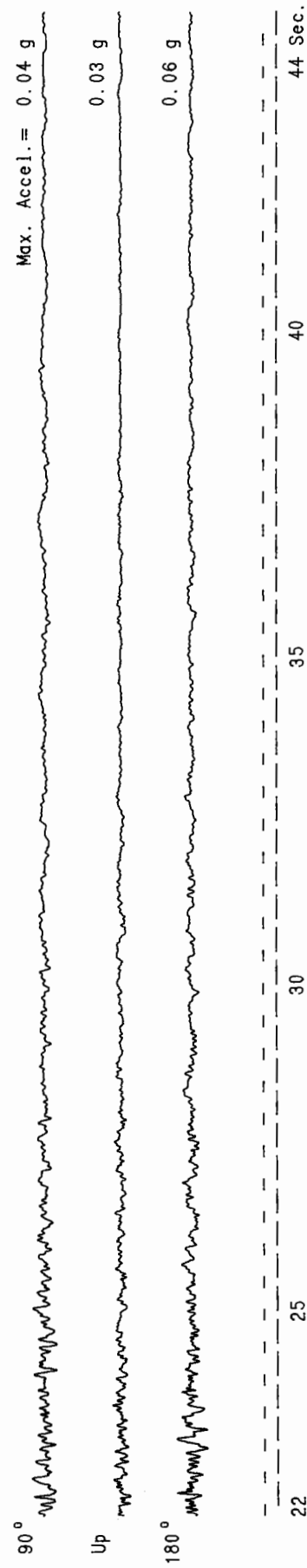
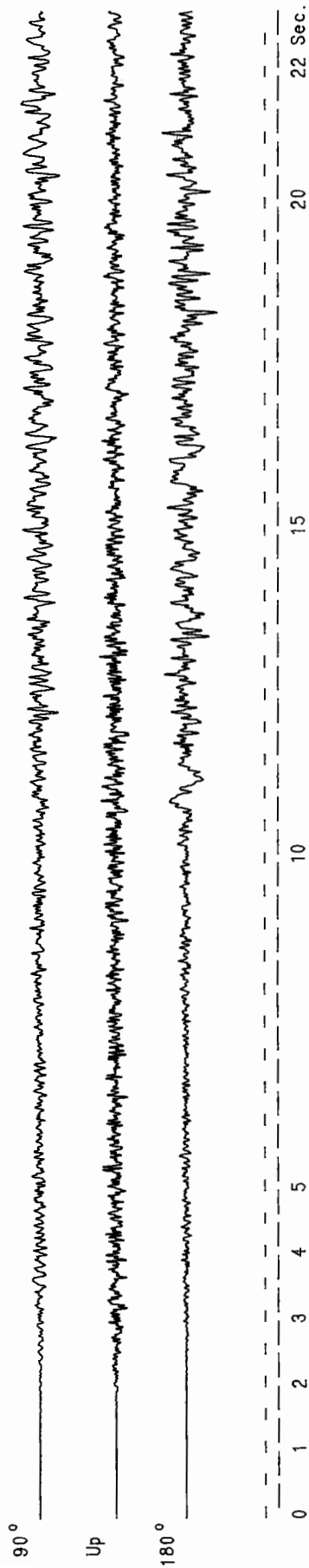
RECORD 23584-E0244-92182.04



This page plotted with 4.0x vertical exaggeration.

Phelan - Wilson Ranch Road  
(CSMIP Station 23597)

RECORD 23597-E0251-92182.09



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Pomona - 4th & Locust  
(CSMIP Station 23525)

Record 23525-S2785-92184.04

Max.  
Accel.

90° 0.03 g

Up 0.03 g

360° 0.03 g

20 Sec.

Puerta La Cruz - USFS Storage Bldg.  
(CSMIP Station 12168)

Record 12168-S1843-92184.04

Max.  
Accel.

90° 0.07 g

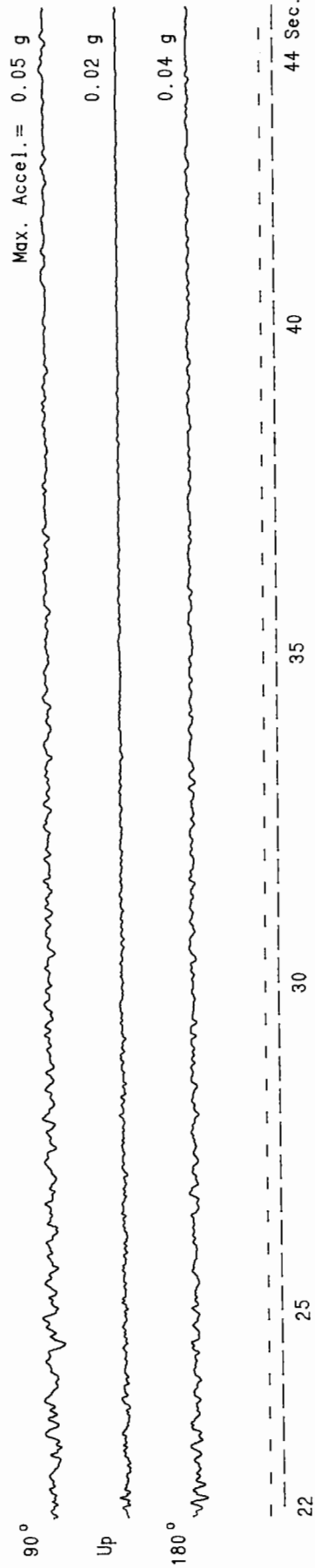
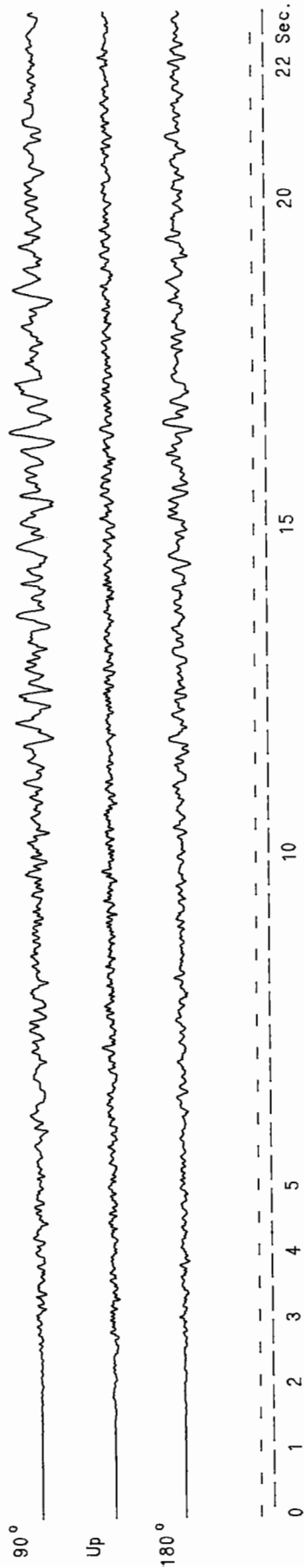
Up 0.05 g

360° 0.07 g

20 Sec.

Rancho Cucamonga - Deer Canyon  
(CSMIP Station 23598)

RECORD 23598-E0253-92182.11



This page plotted with 4.0x vertical exaggeration.

Riverside - Airport  
(CSMIP Station 13123)

Record 13123-S1593-92182.03

Max.  
Accel.

270° 0.05 g

Up 0.05 g

180° 0.05 g

20 Sec.

San Jacinto - Valley Cemetery  
(CSMIP Station 12202)

Record 12202-S1864-92183.04

Max.  
Accel.

90° 0.05 g

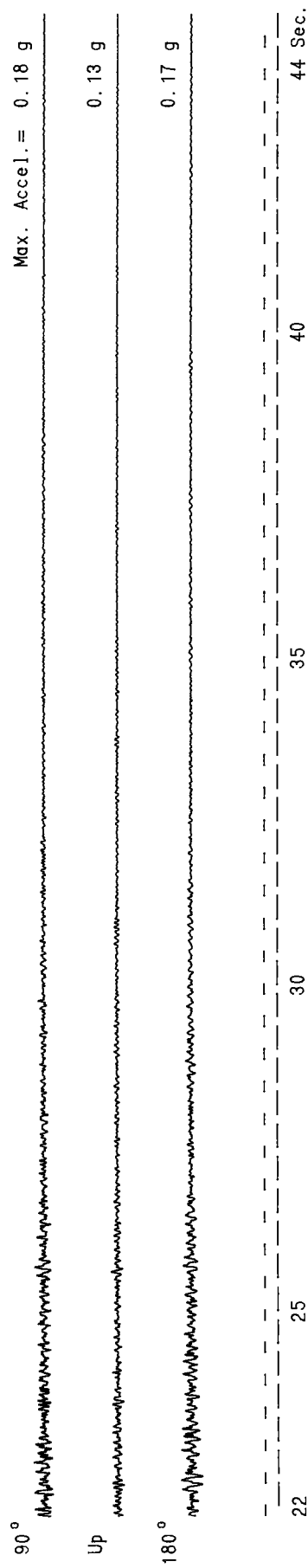
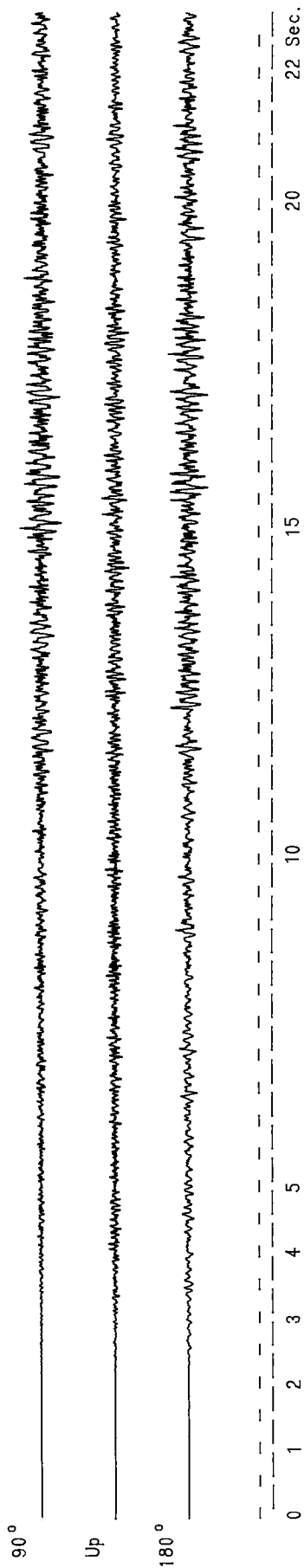
Up 0.04 g

360° 0.07 g

20 Sec.

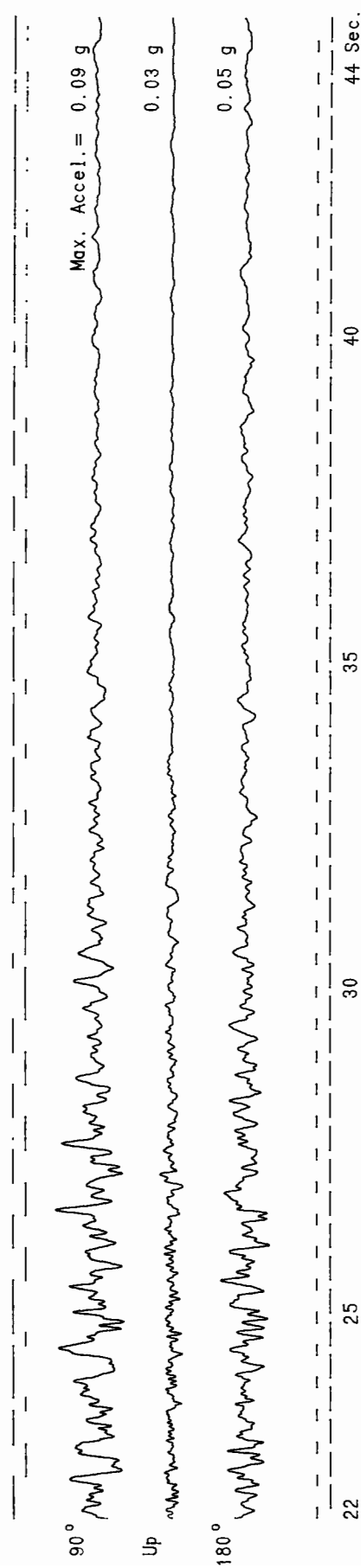
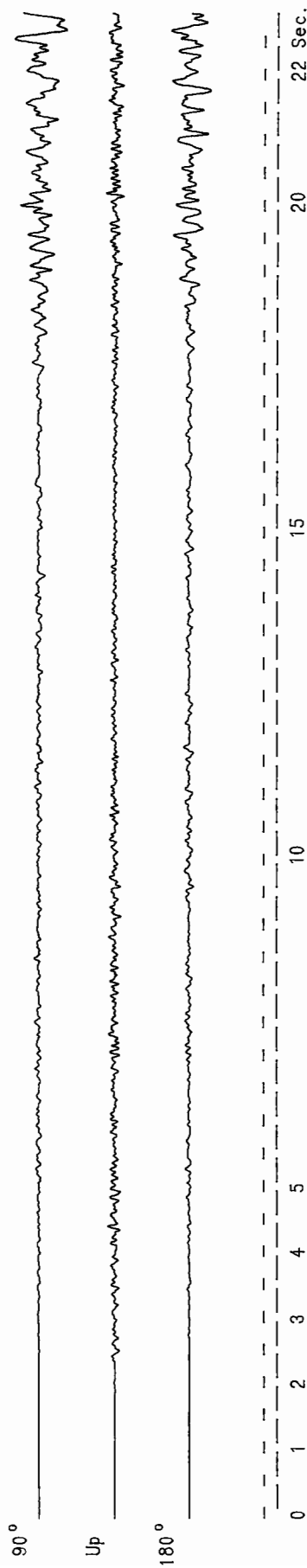
# Sage - Fire Station (CSMIP Station 12636)

RECORD 12636-E0554-92184.18



Salton City  
(CSMIP Station 11628)

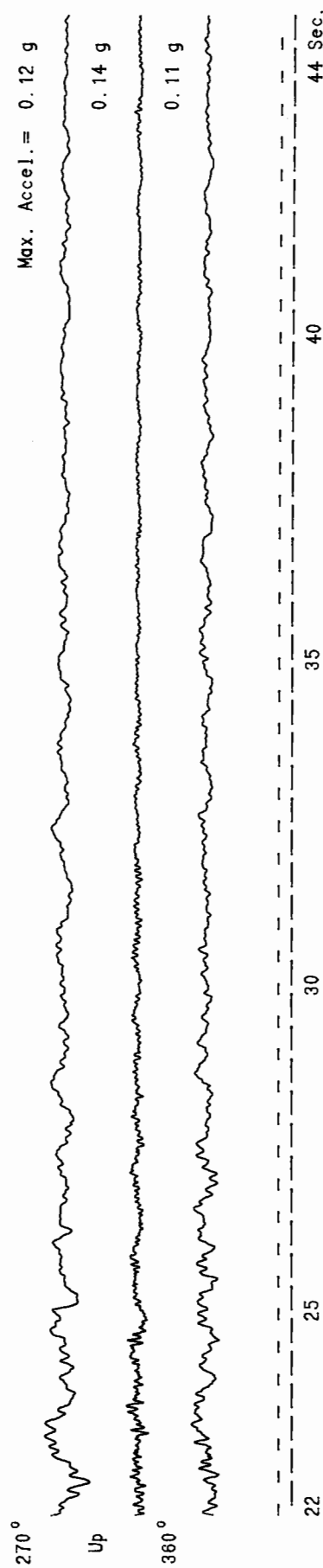
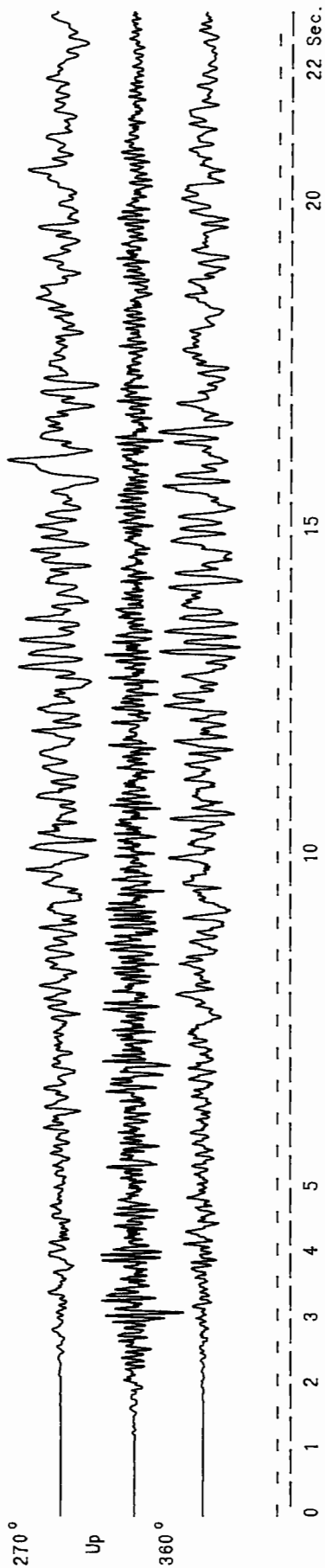
RECORD 11628-E0544-92181.26



**This page plotted with 4.0x vertical exaggeration.**

San Bernardino - 2nd & Arrowhead  
(CSMIP Station 23522)

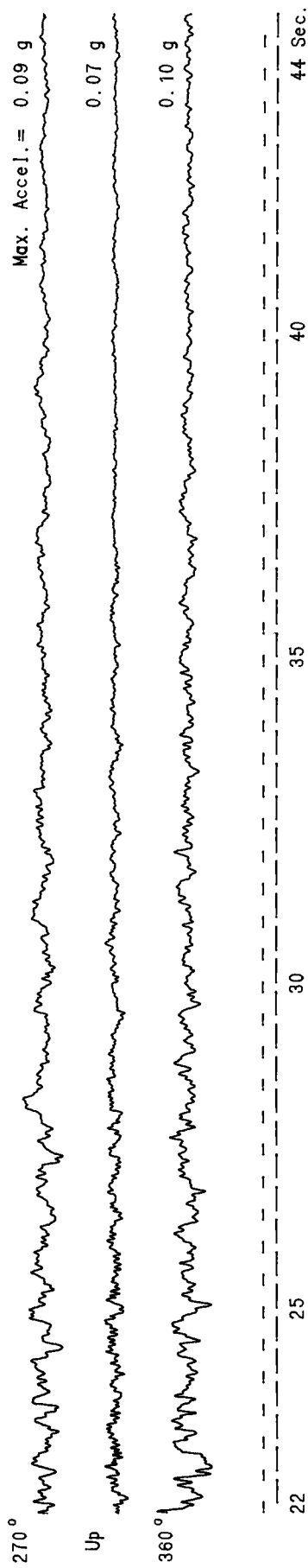
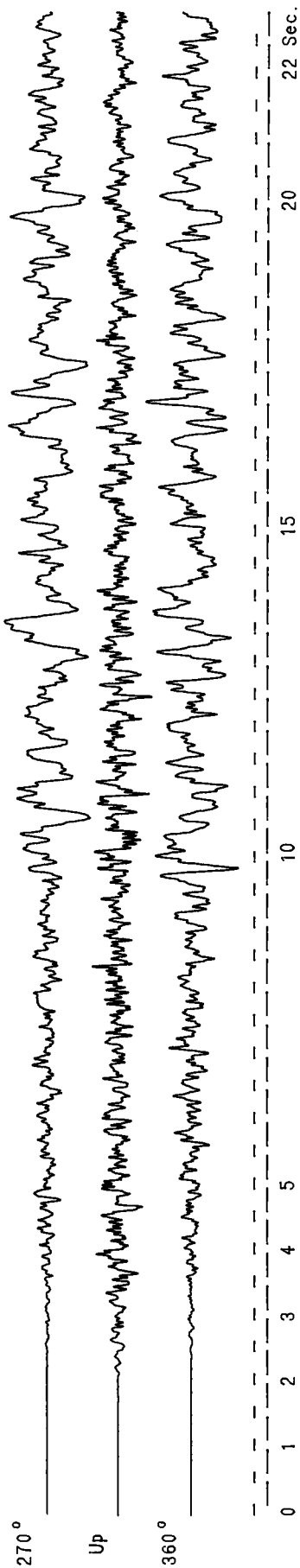
RECORD 23522-D0267-92182.04



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San Bernardino - E & Hospitality  
(CSMIP Station 23542)

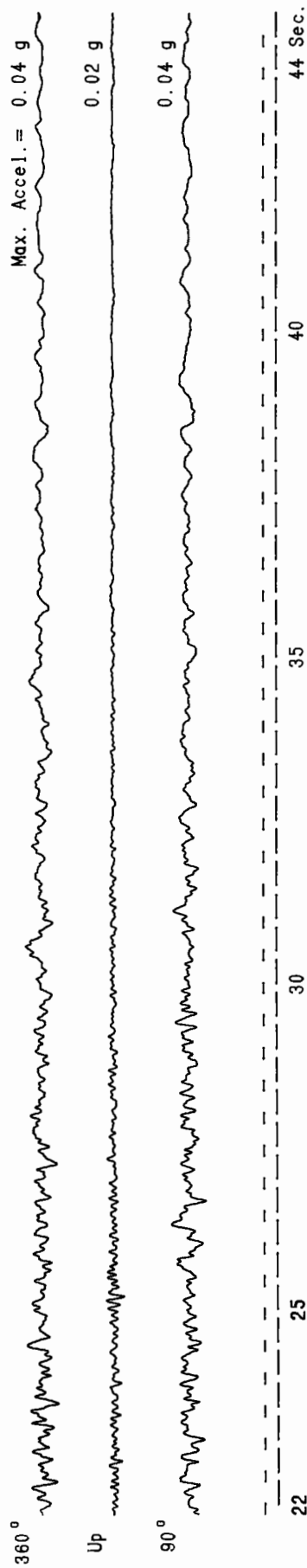
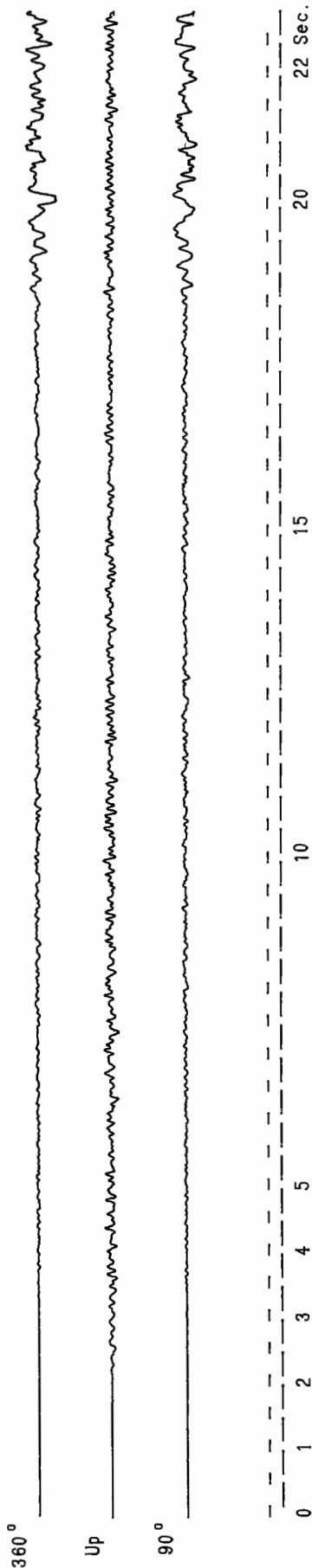
RECORD 23542-E0557-92181.09



This page plotted with 4.0x vertical exaggeration.

# Seal Beach - 8-story Office Bldg. Parking Lot (CSMIP Station 14578)

RECORD 14578-F0112-92180.05



This page plotted with 4.0x vertical exaggeration.

Snow Creek  
(CSMIP Station 12630)

RECORD 12630-E0550-92181.05

90°

Up

180°

0 1 2 3 4 5

10

15

20

22 Sec.

90°

Up

180°

Max. Accel. = 0.17 g

0.09 g

0.12 g

22

25

30

35

40

44 Sec.

Silent Valley - Poppet Flat  
(CSMIP Station 12206)

Record 12206-S1868-92183.04

Max.  
Accel.

0.07 g

0.06 g

0.08 g

90°

Up

360°

20 Sec.

15

10

5

4

3

2

1

Tarzana - Cedar Hill Nursery  
(CSMIP Station 24436)

Record 24436-S1814-92196.03

Max.  
Accel.

0.03 g

0.01 g

0.05 g

90°

Up

360°

20 Sec.

15

10

5

4

3

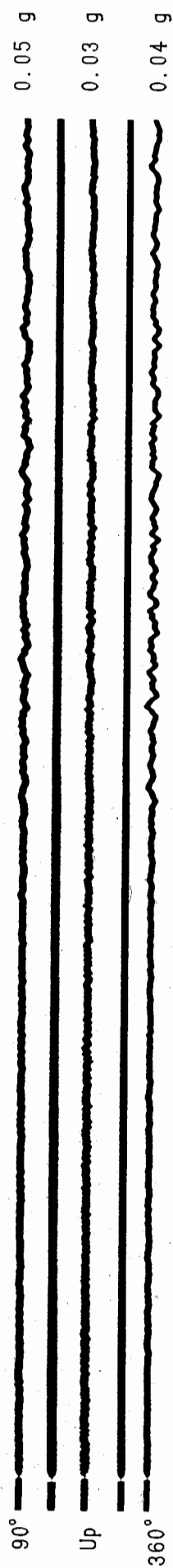
2

1

Temecula - 6th & Mercedes  
(CSMIP Station 13172)

Record 13172-S5090-92184.05

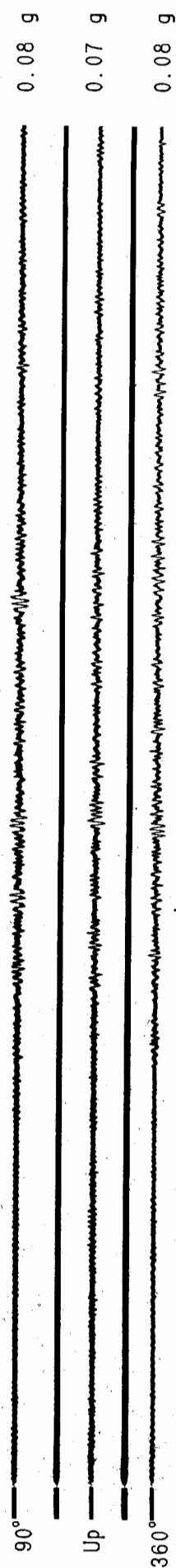
Max.  
Accel.



Winchester - Bergman Ranch  
(CSMIP Station 13199)

Record 13199-S1862-92185.04

Max.  
Accel.



# Winchester - Hidden Valley Farms (CSMIP Station 13200)

Record 13200-S1871-92185.03

Max.  
Accel.

0.08 g

0.03 g

0.07 g

90°

Up

360°

0

1

2

3

4

5

10

15

20 Sec.

# Yermo - Fire Station (CSMIP Station 22074)

Record 22074-S1695-92189.05

Max.  
Accel.

0.06 g

0.05 g

0.04 g

360°

Up

270°

0

1

2

3

4

5

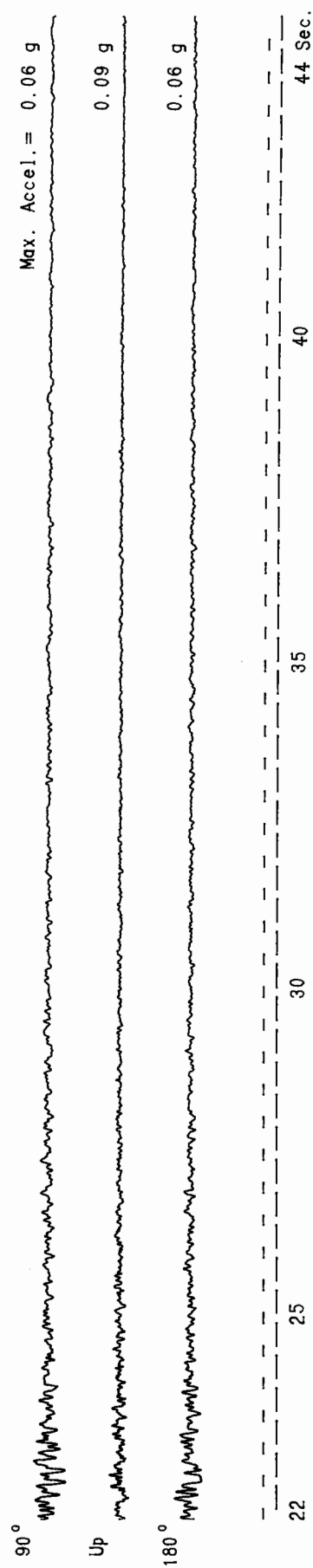
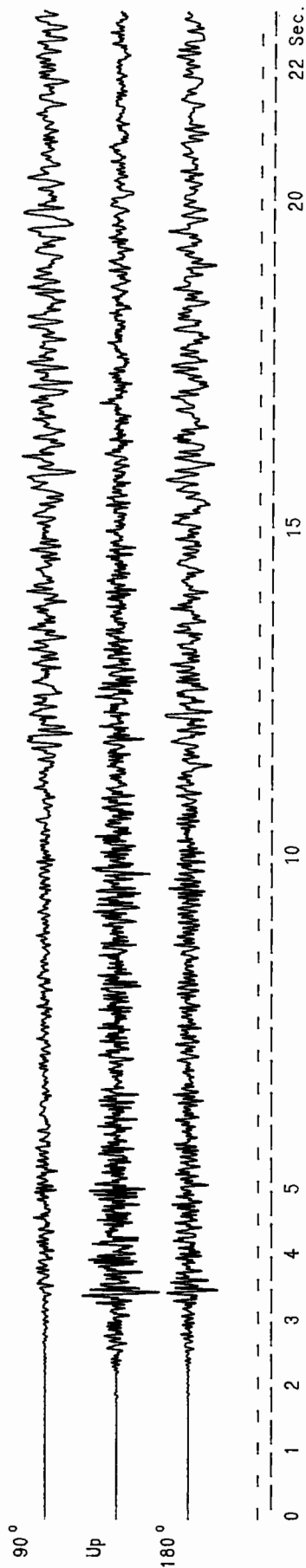
10

15

20 Sec.

Wrightwood - Nielson Ranch  
(CSMIP Station 23573)

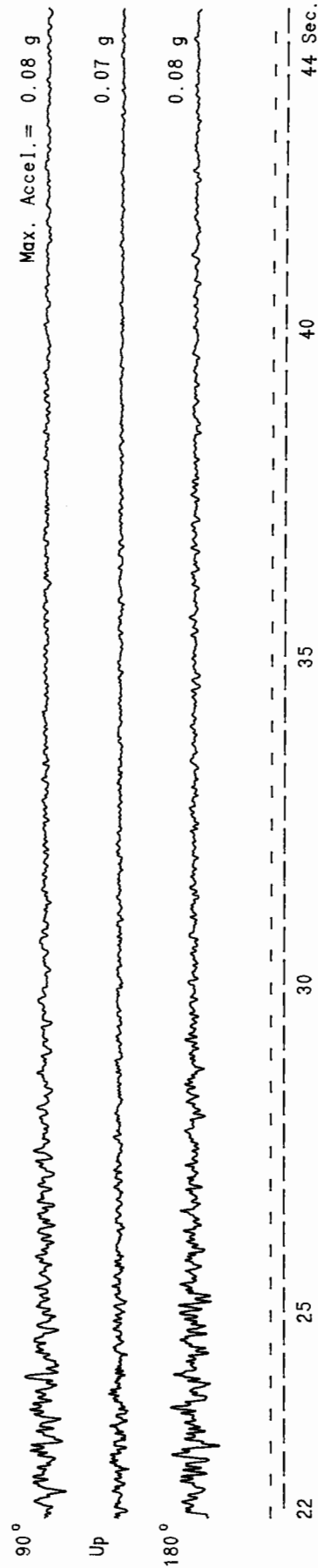
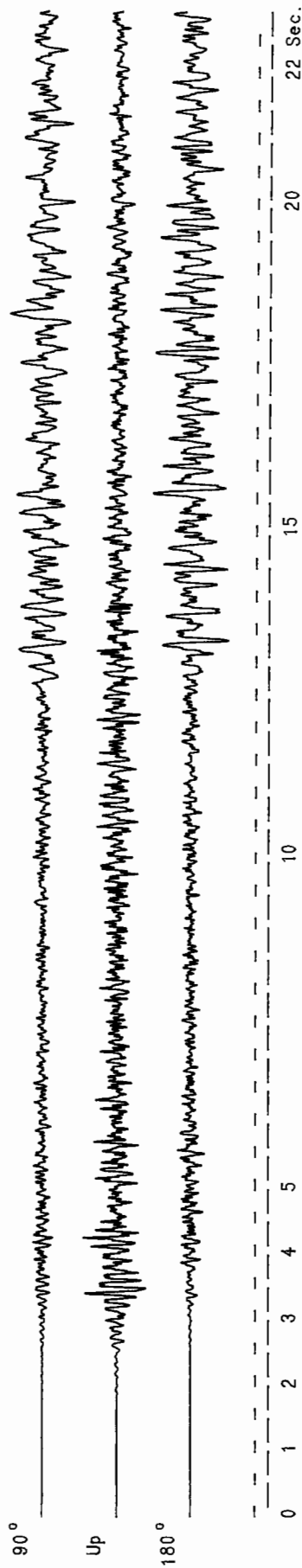
RECORD 23573-E0413-92182.10



This page plotted with 4.0x vertical exaggeration.

Wrightwood - Swarthout Valley  
(CSMIP Station 23574)

RECORD 23574-E0411-92182.12



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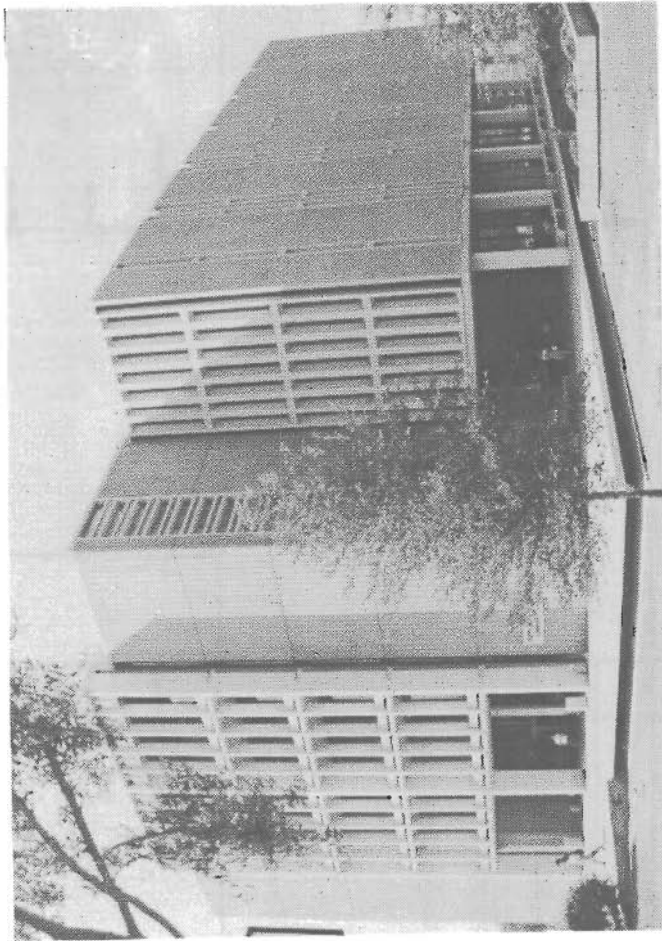
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**San Bernardino - 5-story CSUSB Library**  
(CSMIP Station No. 23285)

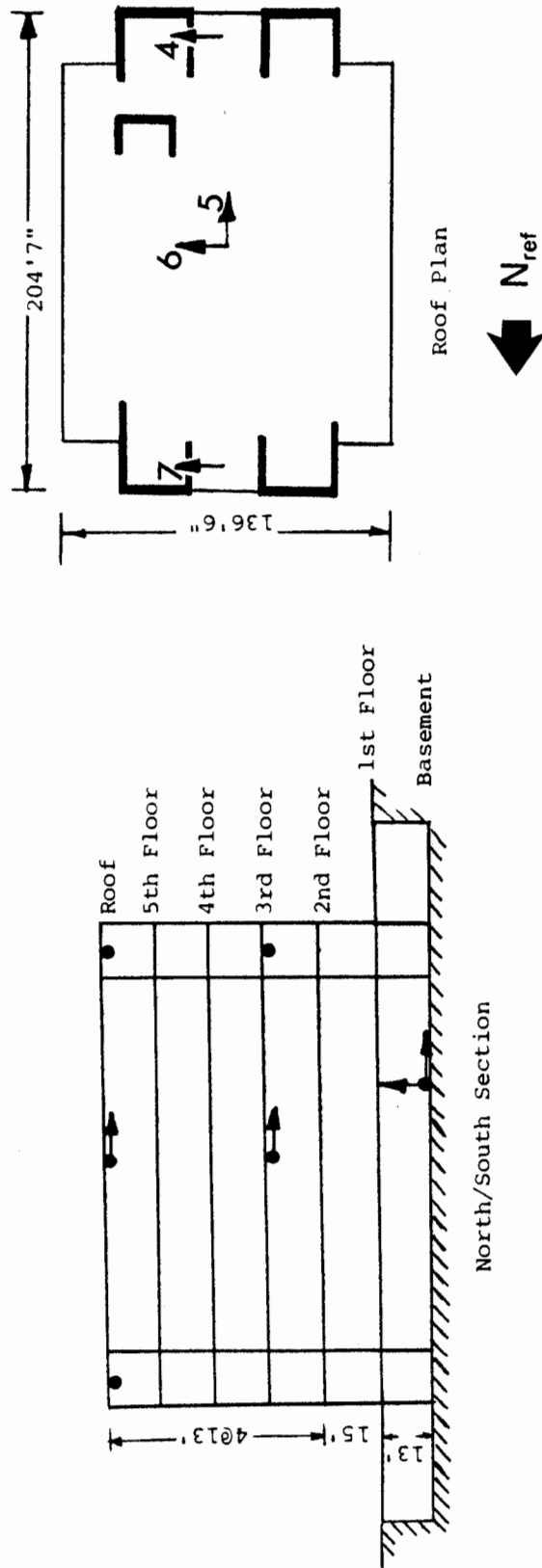


No. of Stories above/below ground: 5/1  
Plan Shape: Rectangular  
Base Dimensions: 261' x 136'  
Typical Floor Dimensions: 204' x 136'  
Design Date: 1968  
Construction Date: 1969-70

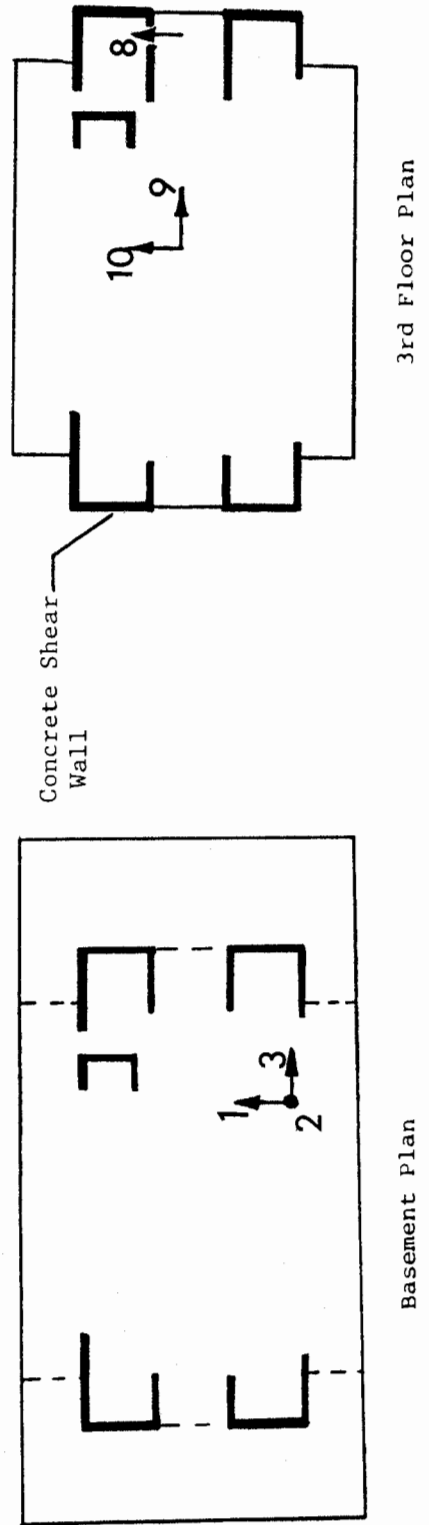
Vertical Load Carrying System:  
9" concrete slabs supported by concrete columns.  
Lateral Force Resisting System:  
Concrete shear walls in both directions, at each corner of the building.  
Foundation Type:  
Spread footings.

San Bernardino - 5-story CSUSB Library  
(CSMIP Station No. 23285)

SENSOR LOCATIONS



Structure Reference  
Orientation:  $N = 35^\circ$



1 Basement - E Max. Accel. = 0.08 g

2 " - Up 0.08 g

3 " - S 0.07 g

4 Roof: South Wall - E 0.34 g

5 " Center - S 0.14 g

6 " Center - E 0.23 g

7 Roof: North Wall - E 0.20 g

8 3rd Floor: South Wall - E 0.19 g

9 " Center - S 0.12 g

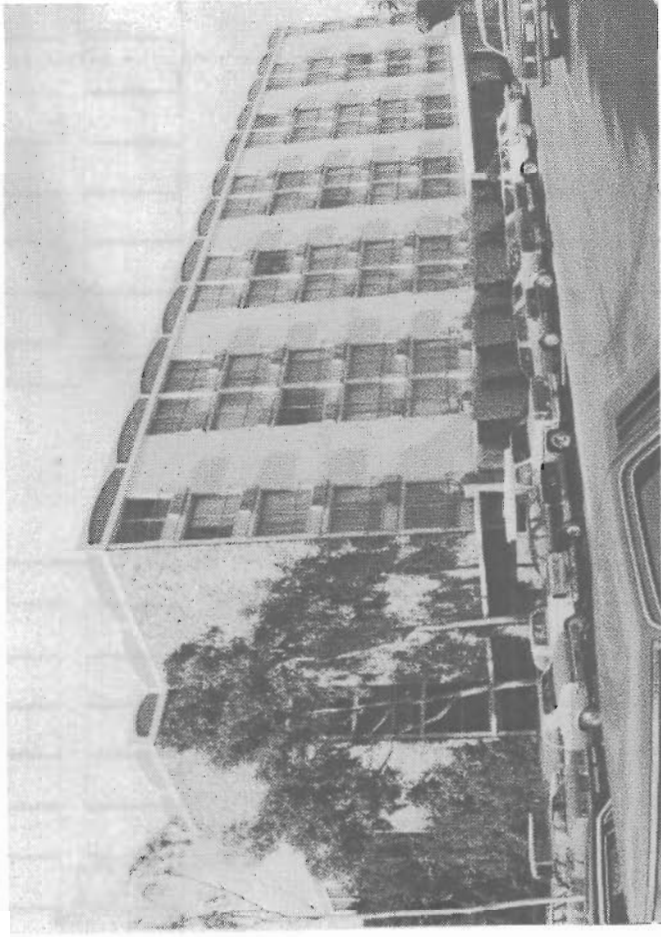
10 " Center - E 0.14 g

Structure Reference Orientation: N=35°

0 1 2 3 4 5 10 15 20 22 Sec.



**San Bernardino - 6-story Hotel**  
(CSMIP Station No. 23287)



No. of Stories above/below ground: 6/0  
Plan Shape: Rectangular  
Base Dimensions: 58' x 172'  
Typical Floor Dimensions: 58' x 172'  
Design Date: 1970  
Construction Date: 1971 ±

**Vertical Load Carrying System:**

5.5" and 7.5" precast concrete floor panels supported on 8" and 9" concrete walls.

**Lateral Force Resisting System:**

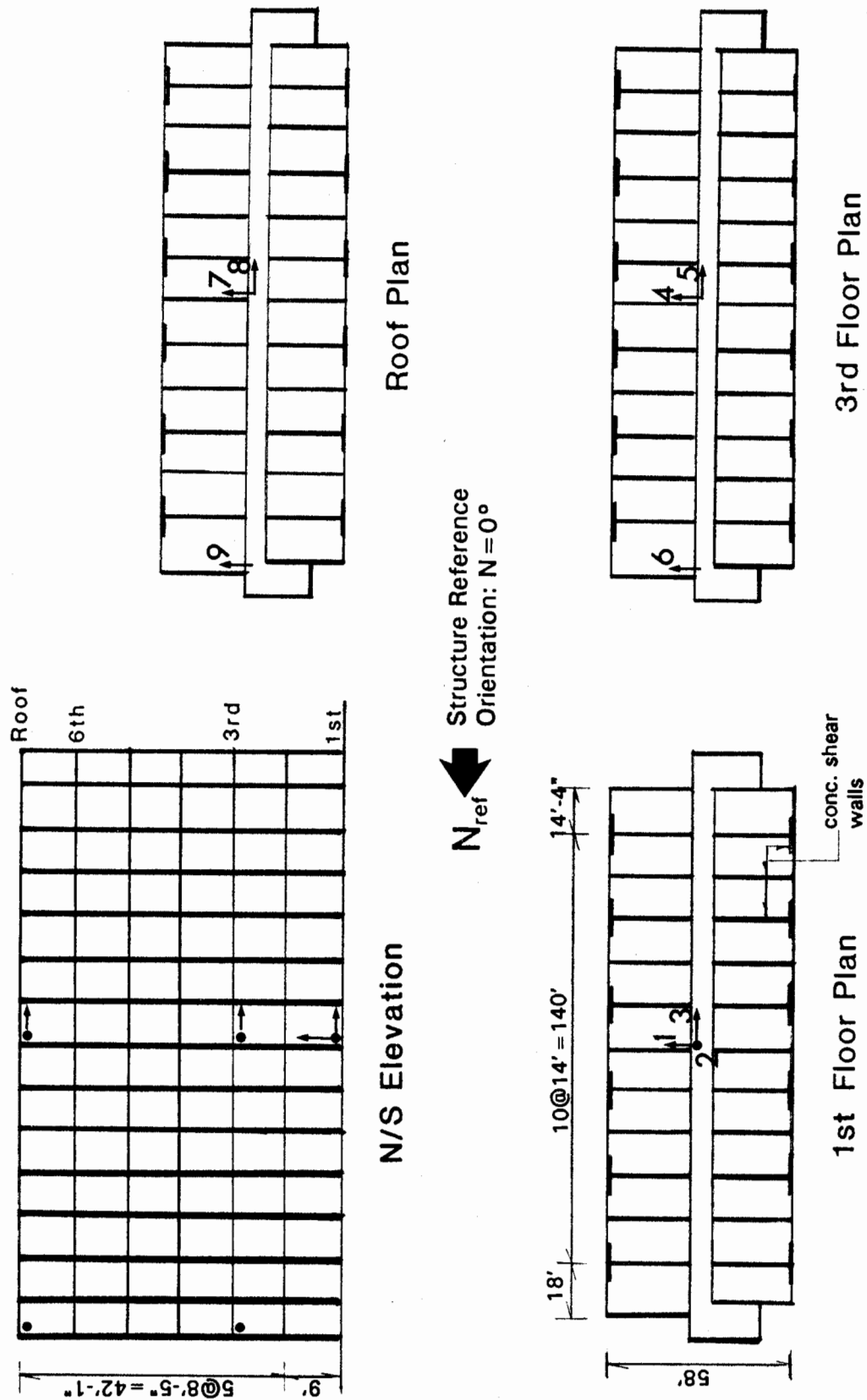
Multiple concrete shear walls, 8" in the transverse direction and, 9" exterior walls with window openings in the longitudinal direction.

**Foundation Type:**

Continuous spread footings under each wall.

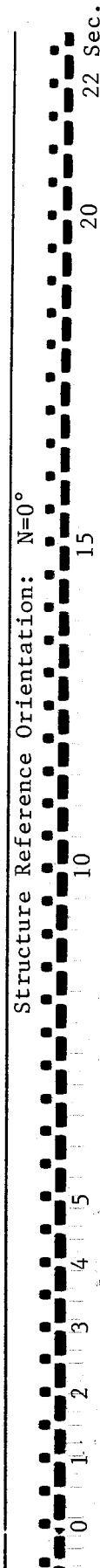
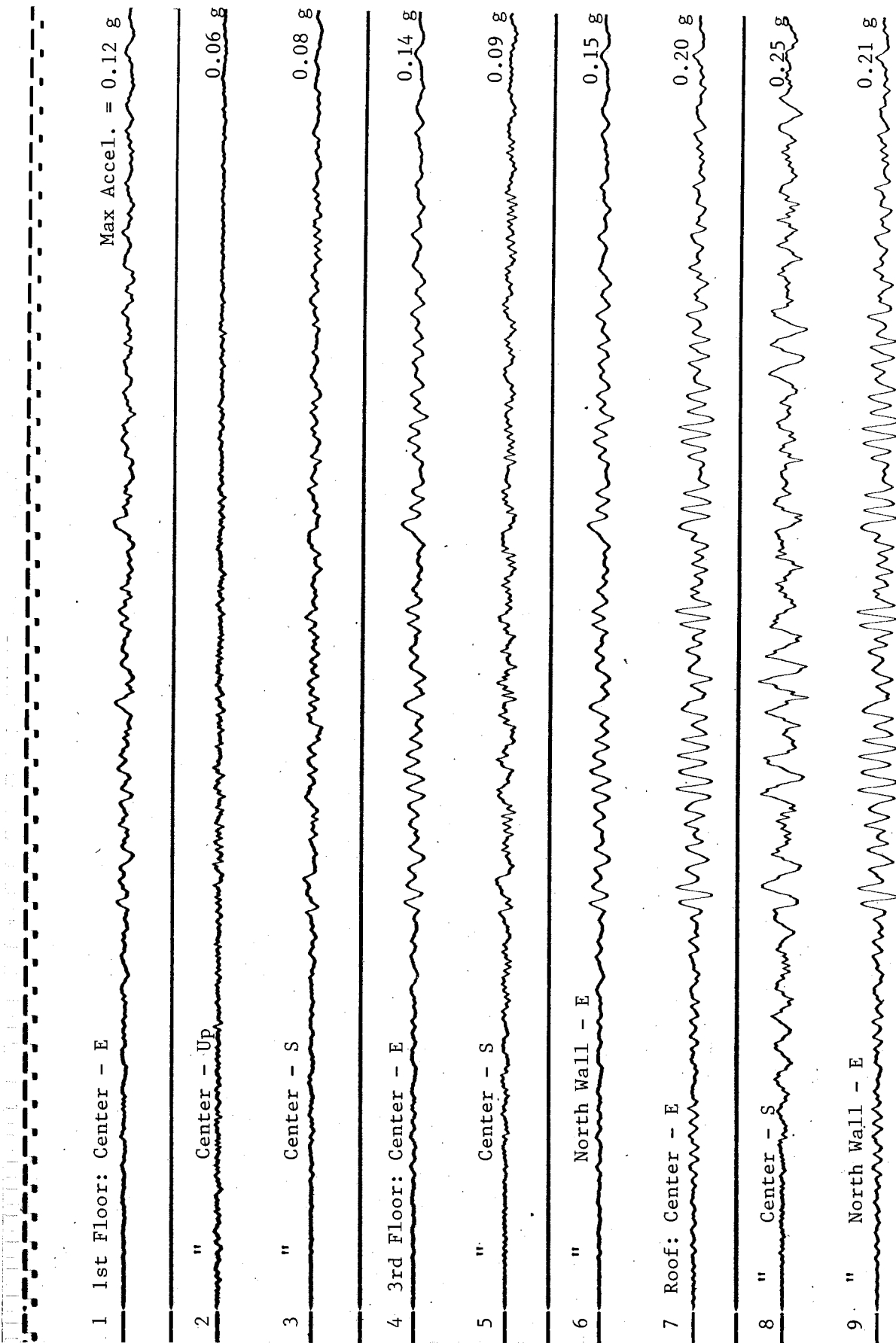
San Bernardino - 6-story Hotel  
(CSMIP Station No. 23287)

SENSOR LOCATIONS



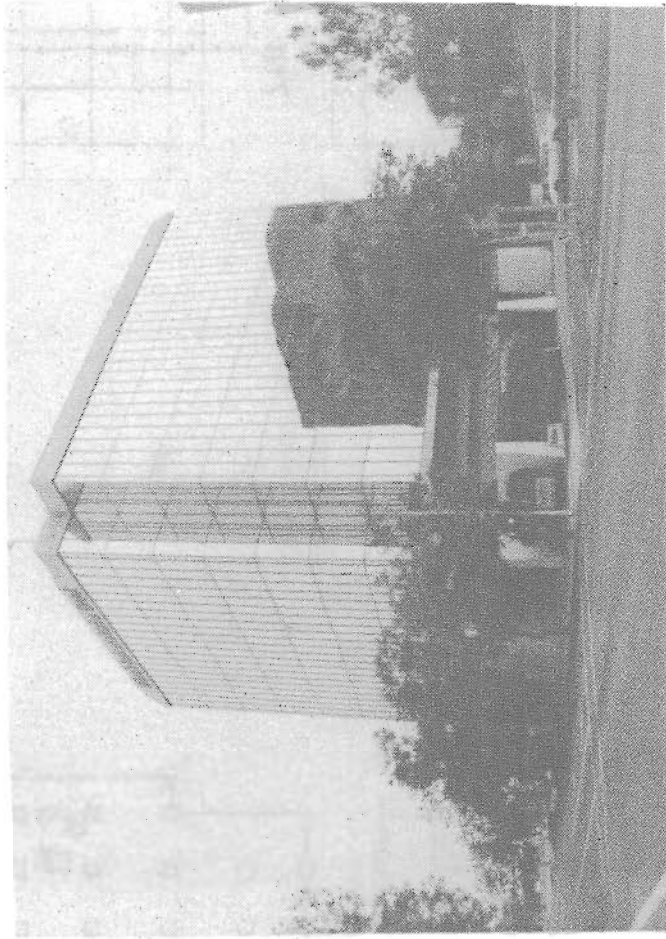
San Bernardino - 6-story Hotel  
(CSMIP Station 23287)

Record 23287-C0134-92181.03





**San Bernardino - 9-story Commercial Bldg.  
(CSMIP Station No. 23515)**

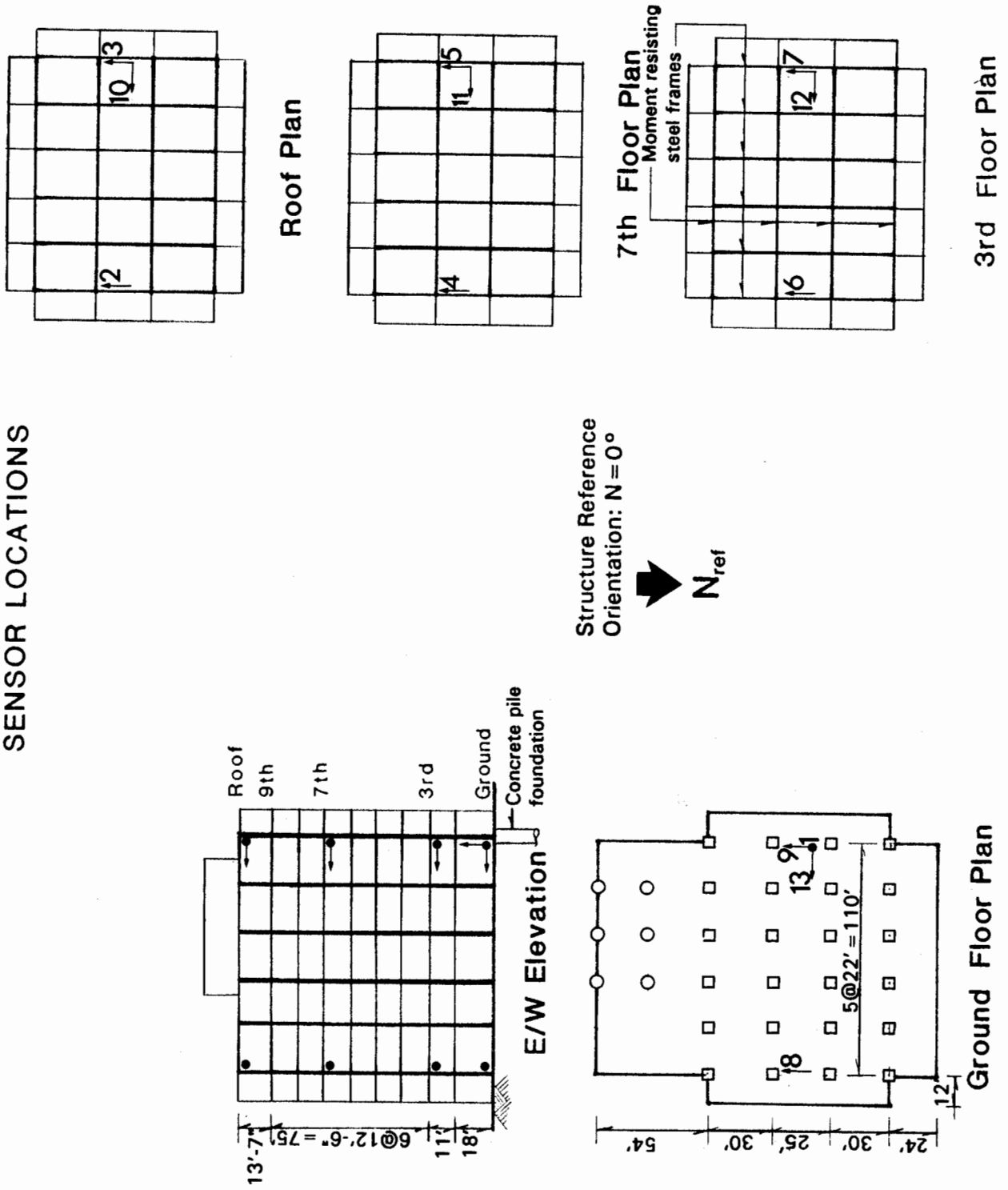


No. of Stories above/below ground: 9/0  
Plan Shape: Rectangular  
Base Dimensions: 134' x 163'  
Typical Floor Dimensions: 134' x 110'  
Design Date: 1974  
Construction Date: 1975

Vertical Load Carrying System:  
Concrete slabs on metal decks supported by  
steel beams and columns.  
Lateral Force Resisting System:  
Distributed moment resisting steel frames.  
Foundation Type:  
Cast-in-place concrete piles.

San Bernardino - 9-story Commercial Bldg.  
(CSMIP Station No. 23515)

SENSOR LOCATIONS



San Bernardino - 9-story Commercial Bldg.

(CSMIP Station 23515)

Record 23515-C0278-92181.04

1. Ground Floor: West End - Up

2 Roof: East End - S

3 " West End - S

4 7th Floor: East End - S

5 " West End - S

6 3rd Floor: East End - S

7 " West End - S

8 Ground Floor: East End - S

9 " West End - S

10 Roof - E

11 7th Floor - E

12 3rd Floor - E

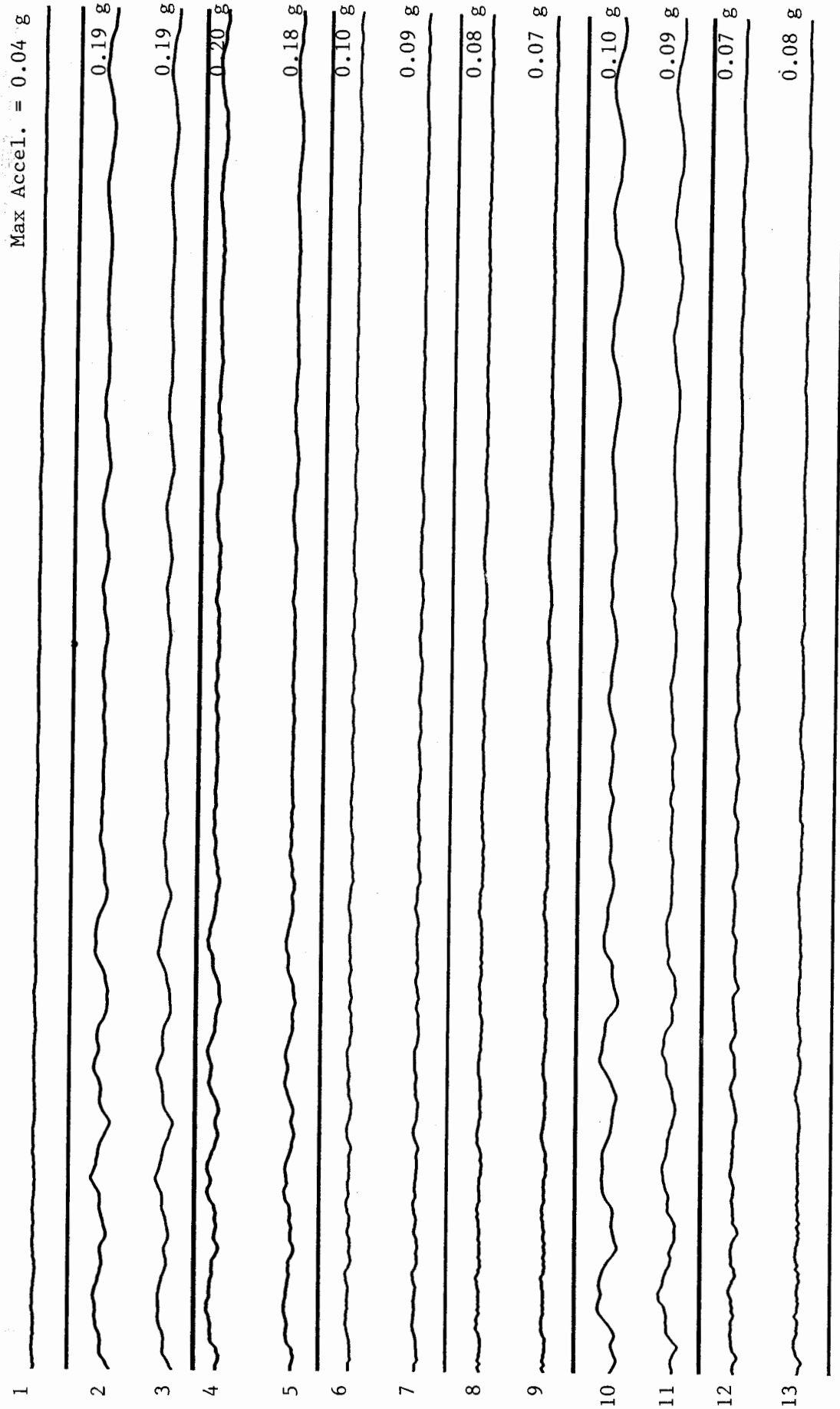
13 Ground Floor - E

Structure Reference Orientation: N=0°

0 1 2 3 4 5 10 15 20 22 Sec.

San Bernardino - 9-story Commercial Bldg.  
(CSMIP Station 23515)

Record 23515-C0278-92181.04



22 25 30 35 40 44 Sec.

**San Bernardino - 5-story Hospital**  
(CSMIP Station No. 23634)



No. of Stories above/below ground: 5/0  
Plan Shape: Irregular  
Base Dimensions: 181' x 174'  
Typical Floor Dimensions: 162' x 130'  
Design Date: 1986  
Construction Date: 1989

**Vertical Load Carrying System:**

3.25" concrete slabs over metal decks supported by steel frames. Exterior wall is stucco on steel studs attached to steel frames.

**Lateral Force Resisting System:**

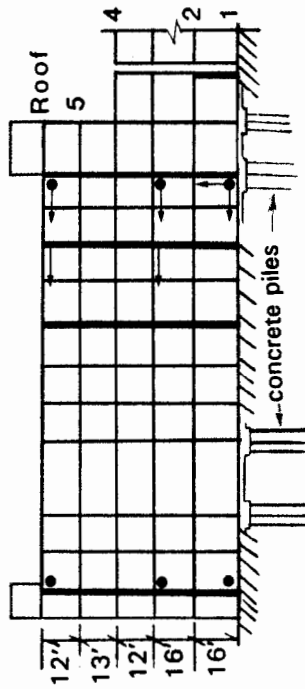
Multiple ductile moment resisting steel frames in both directions.

**Foundation Type:**

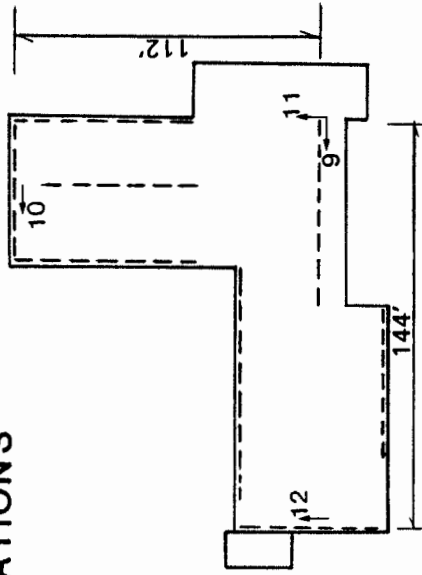
Cast-in-place concrete friction piles.

San Bernardino - 5-story Hospital  
(CSMIP Station No. 23634)

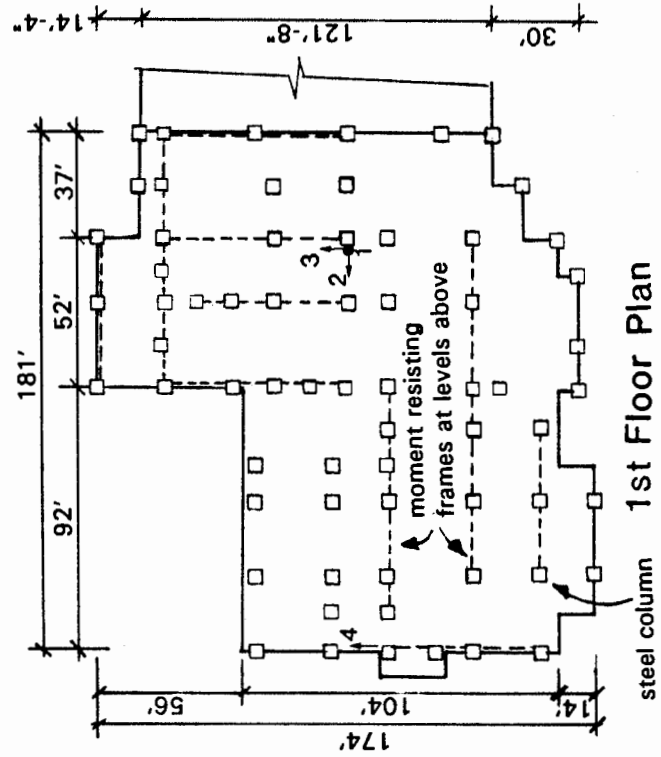
SENSOR LOCATIONS



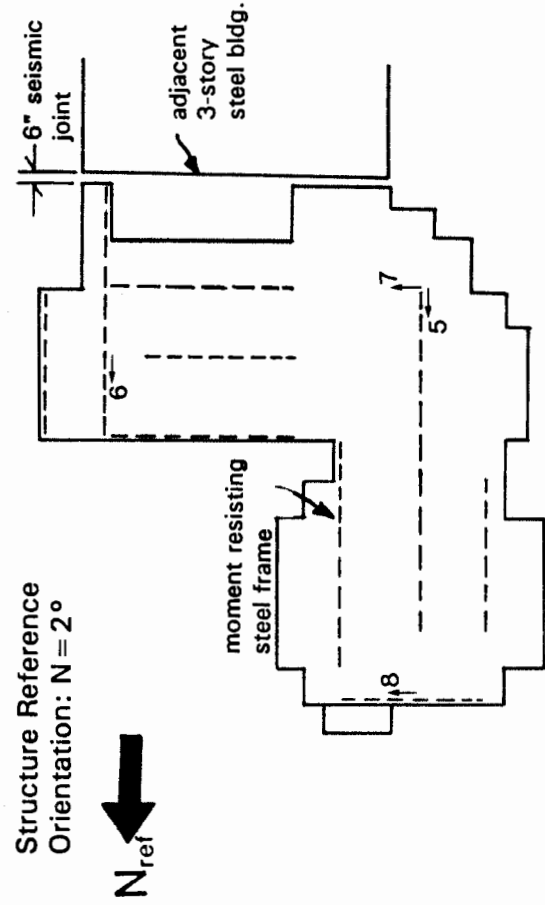
N/S Elevation



Roof Plan



1st Floor Plan



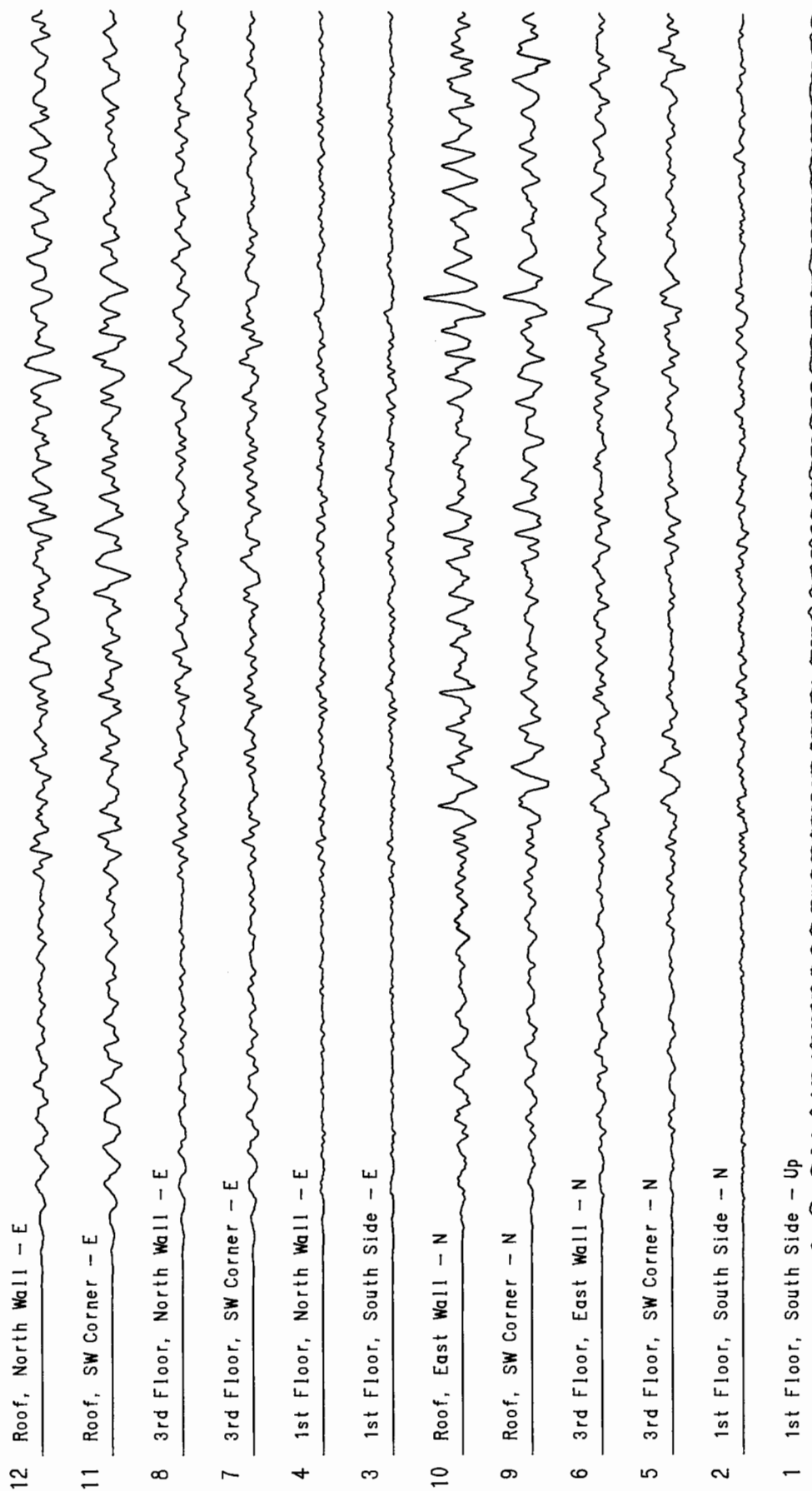
3rd Floor Plan

Structure Reference  
Orientation:  $N = 2^\circ$



San Bernardino - 5-story Hospital  
(CSMIP Station 23634)

RECORD 23634-CS126-92181.14

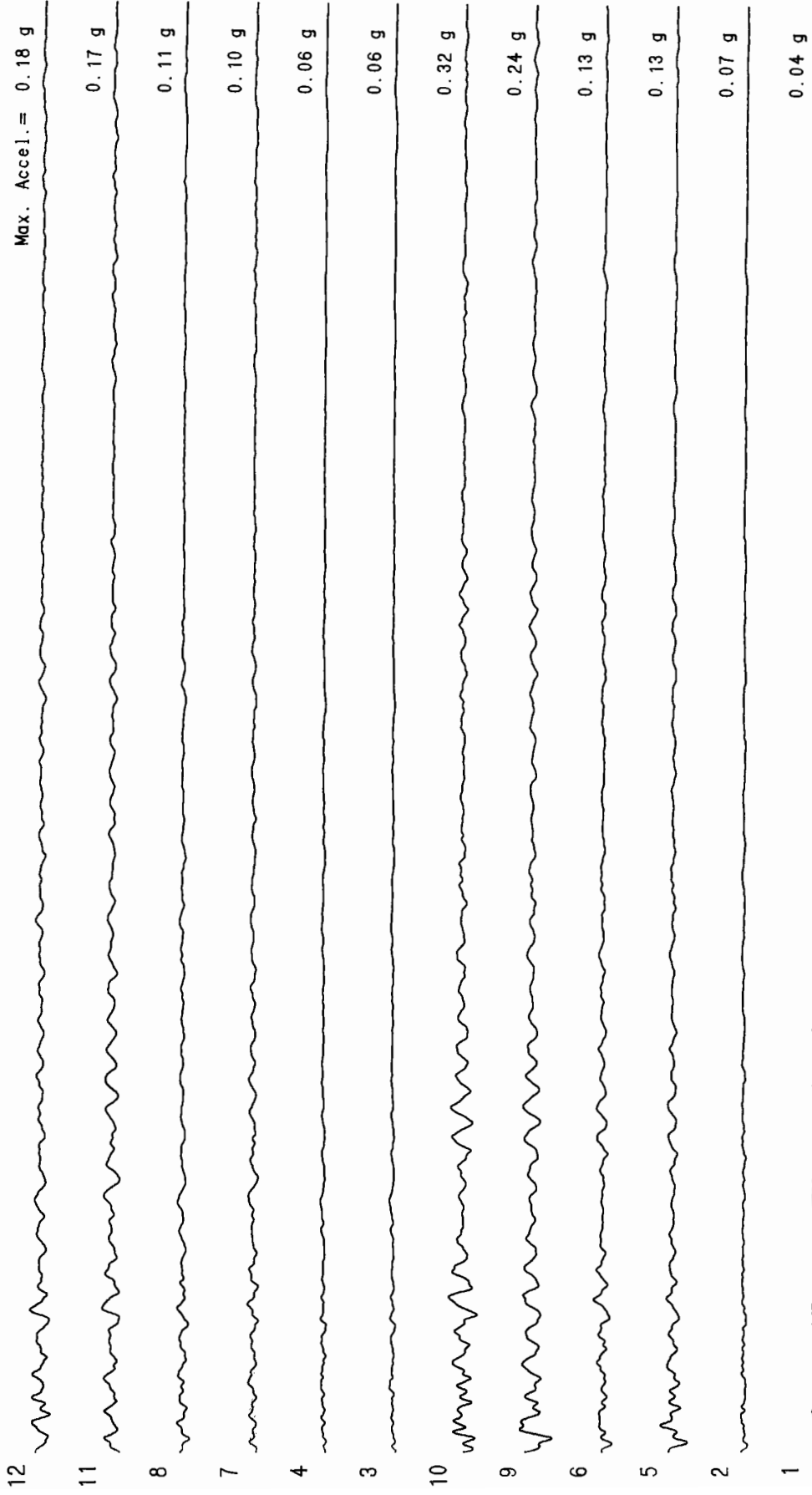


Structure Reference Orientation:  $N=2^\circ$

0 1 2 3 4 5 10 15 20 22 Sec.

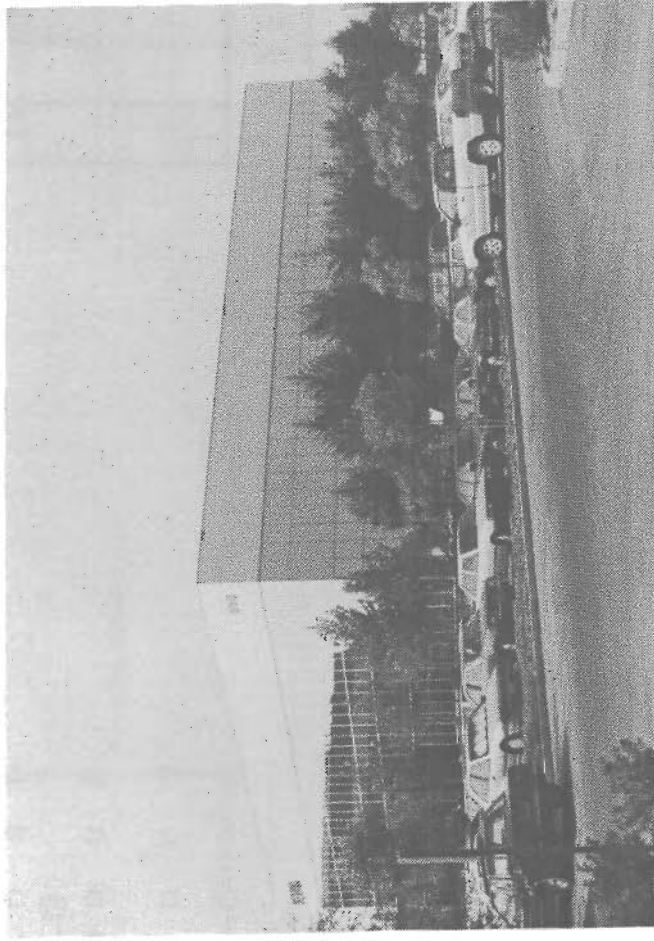
San Bernardino - 5-story Hospital  
(CSMIP Station 23634)

RECORD 23634-CS126-92181.14



22 25 30 35 40 44 Sec.

**San Bernardino - 3-story Office Bldg.  
(CSMIP Station No. 23516)**

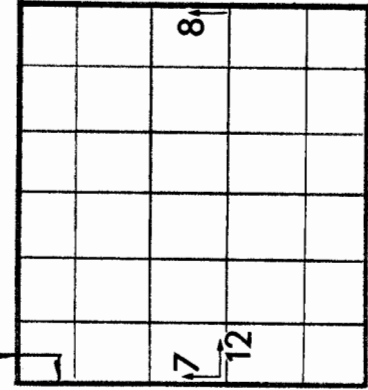
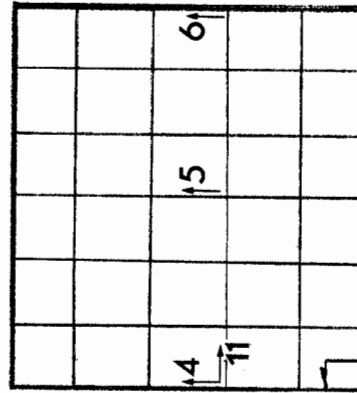
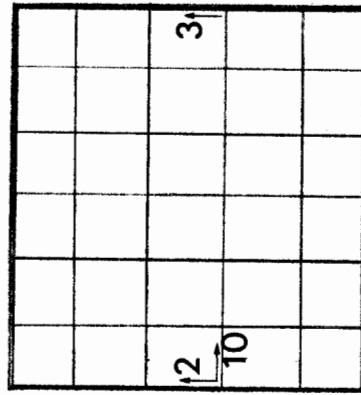


No. of Stories above/below ground: 3/0  
 Plan Shape: Rectangular  
 Base Dimensions: 144' x 132'  
 Typical Floor Dimensions: 144' x 132'  
 Design Date: 1983  
 Construction Date: 1984

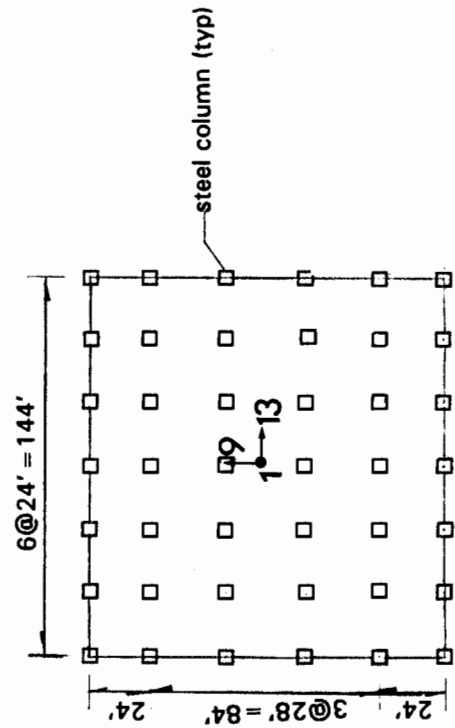
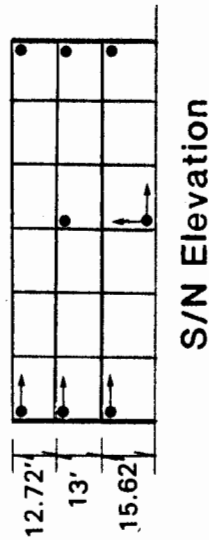
Vertical Load Carrying System:  
 1.5" concrete overlay on plywood and truss-  
 joists supported on steel beams and timber  
 beams.  
 Lateral Force Resisting System:  
 Perimeter moment resisting steel frames and  
 plywood floor diaphragms with concrete  
 overlay.  
 Foundation Type:  
 Spread footings.

San Bernardino - 3-story Office Bldg.  
(CSMIP Station No. 23516)

SENSOR LOCATIONS

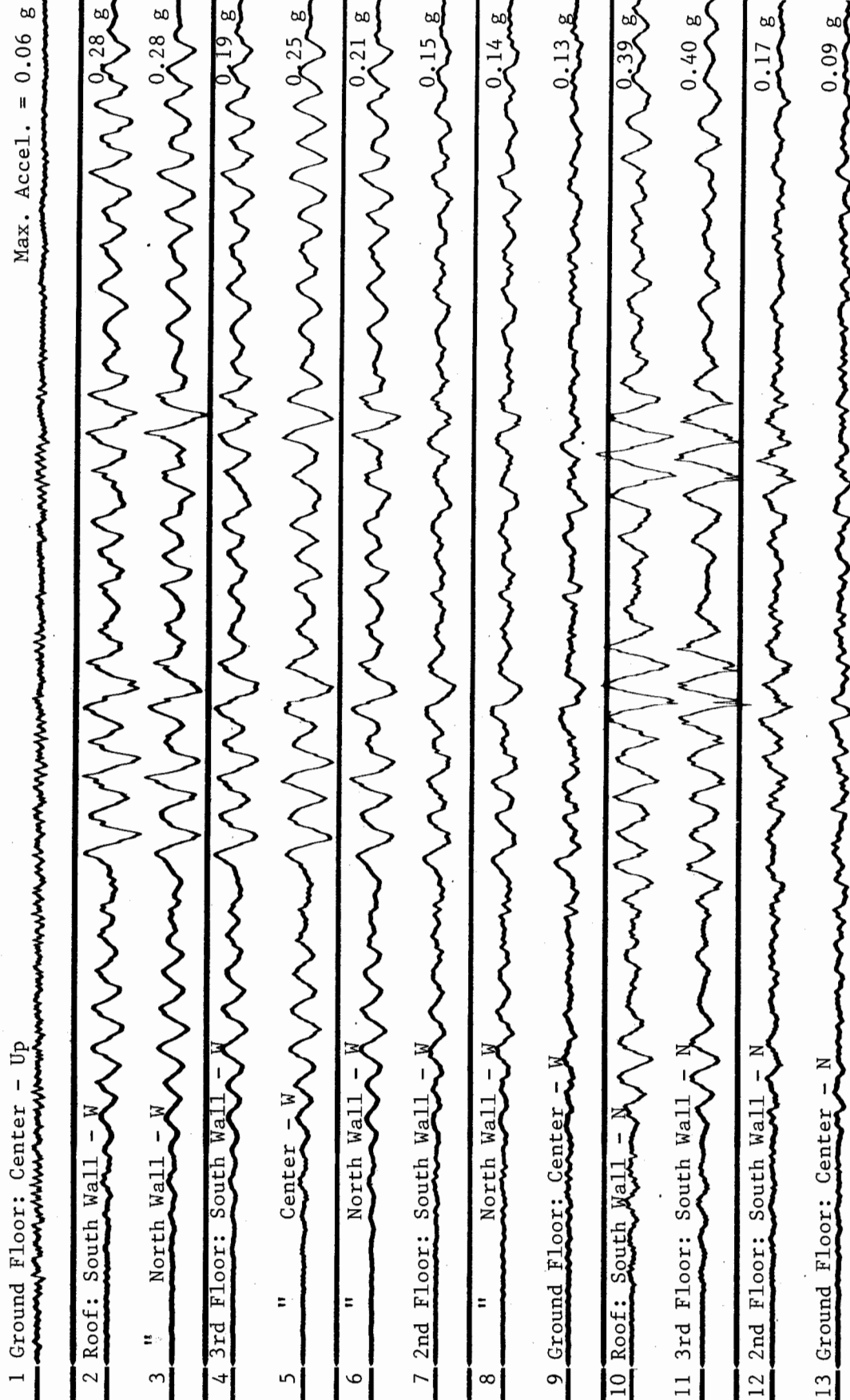


Structure Reference  
Orientation:  $N = 0^\circ$   
  $N_{ref}$



2nd Floor Plan

Ground Level Plan



Structure Reference Orientation: N=0°





**San Bernardino - 1-story Commercial Bldg.**  
(CSMIP Station No. 23622)



No. of Stories above/below ground: 1/0

Plan Shape: Rectangular

Base Dimensions: 75' x 41'

Typical Floor Dimensions: 75' x 41'

Design Date: Unknown

Construction Date: 1950±

Vertical Load Carrying System:

Straight wood sheathing, wood joists and trusses supported by concrete columns.

Lateral Force Resisting System:

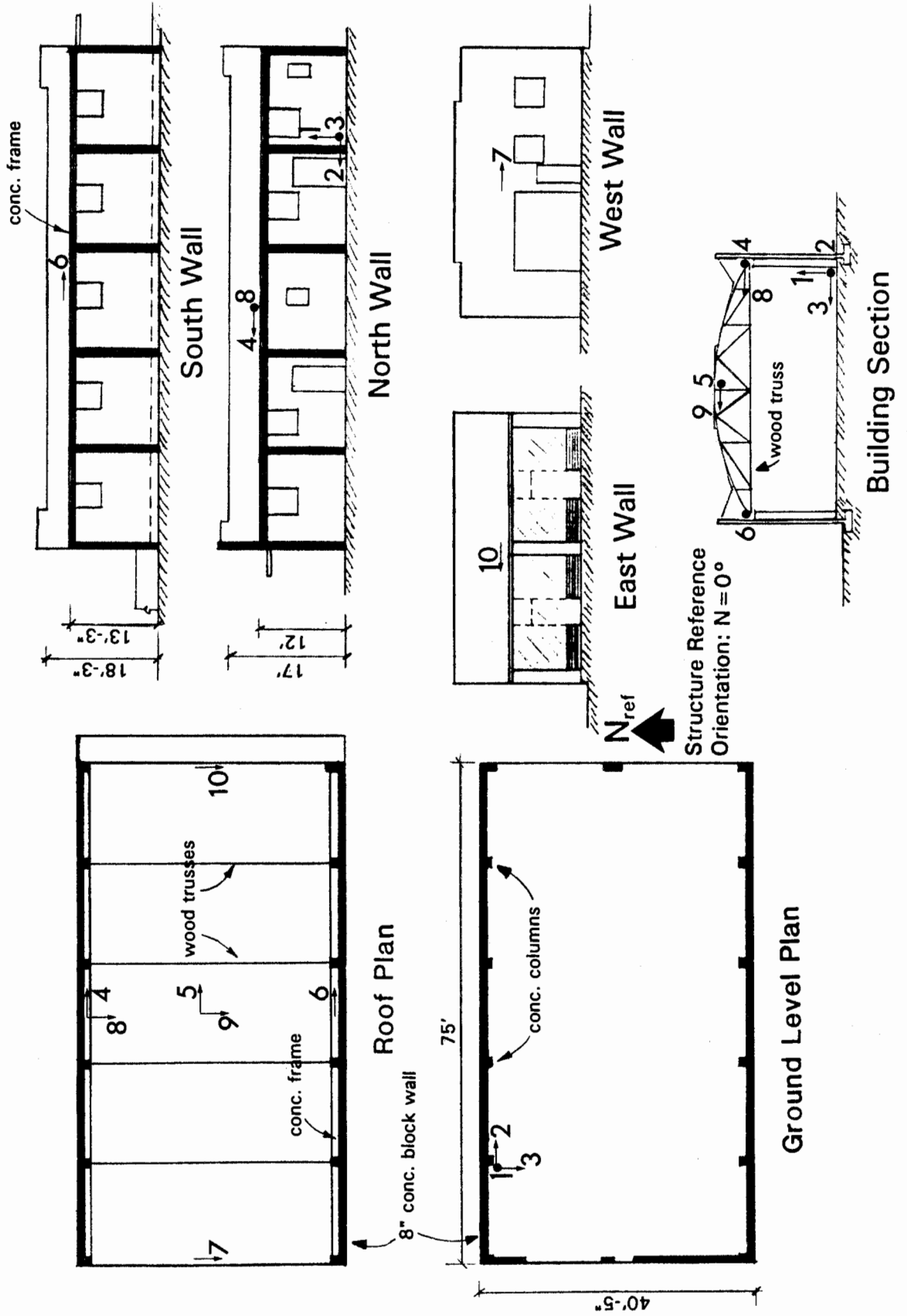
Unreinforced masonry concrete block walls in the longitudinal direction and concrete columns in the transverse direction.

Foundation Type:

Spread footings under columns and walls.

San Bernardino - 1-story Commercial Bldg.  
(CSMP Station No. 23622)

SENSOR LOCATIONS



# San Bernardino - 1-story Commercial Bldg.

(CSMIP Station 23622)

RECORD 23622-CS124-92181.12

7 Roof, West Wall - S



8 Roof, North Wall - S



9 Roof, Center - S



10 Roof, East Wall - S



3 Ground Floor, North Wall - S



4 Roof, North Wall - E



5 Roof, Center - E



6 Roof, South Wall - E



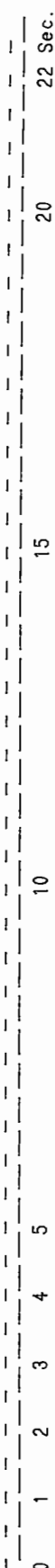
2 Ground Floor, North Wall - E



1 Ground Floor, North Wall - Up



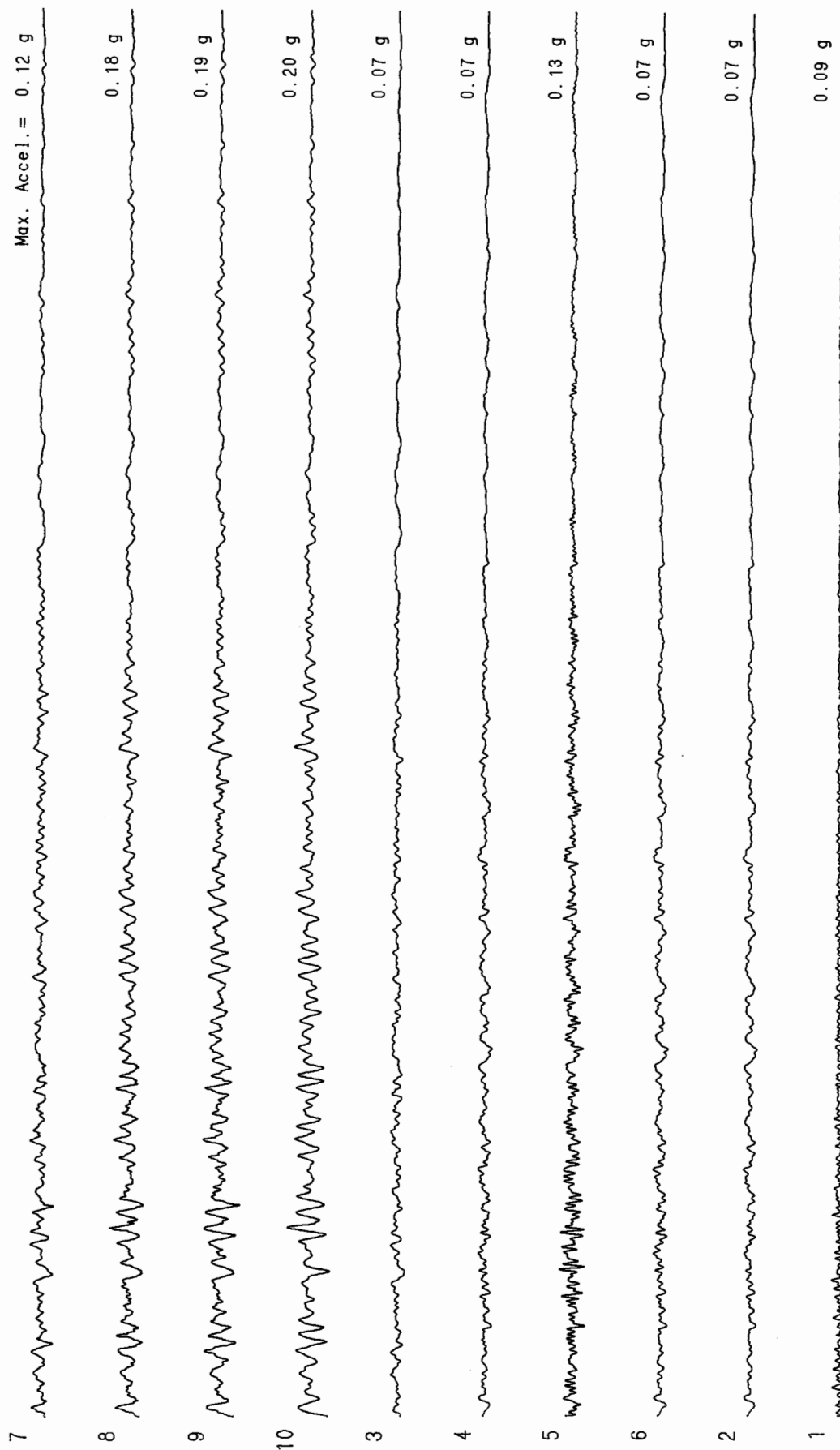
Structure Reference Orientation: N=0°



## San Bernardino - 1-story Commercial Bldg.

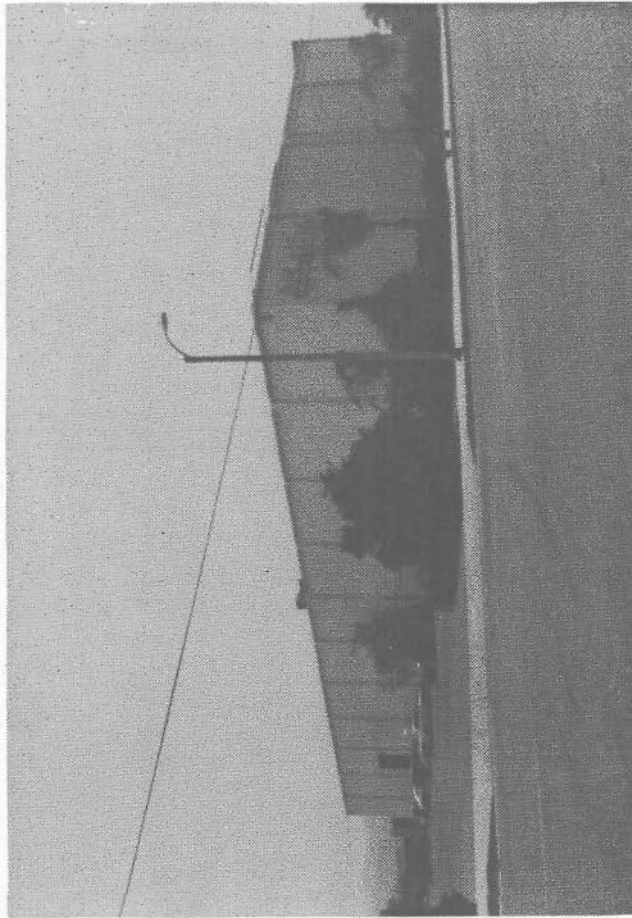
(CSMIP Station 23622)

RECORD 23622-CS124-92181.12



22 25 30 35 40 44 Sec.

**Redlands - 1-story Warehouse**  
(CSMIP Station No. 23495)

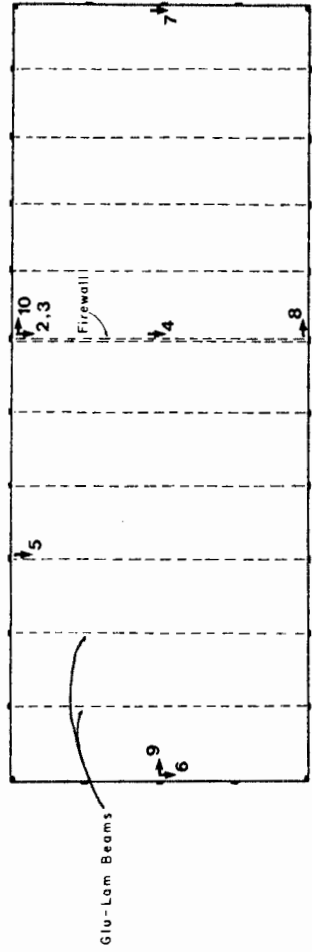


No. of Stories above/below ground: 1/0  
 Plan Shape: Rectangular  
 Base Dimensions: 232' x 90'  
 Typical Floor Dimensions: 232' x 90'  
 Design Date: 1971  
 Construction Date: 1972 ±

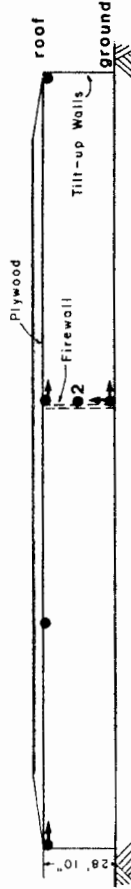
Vertical Load Carrying System:  
 Tilt-up bearing walls, plywood panelized  
 roof on glu-lam beams.  
 Lateral Force Resisting System:  
 Precast concrete tilt-up shear walls and  
 plywood roof diaphragm.  
 Foundation Type:  
 Cast-in-place concrete piles.

Redlands - 1-story Warehouse  
(CSMIP Station No. 23495)

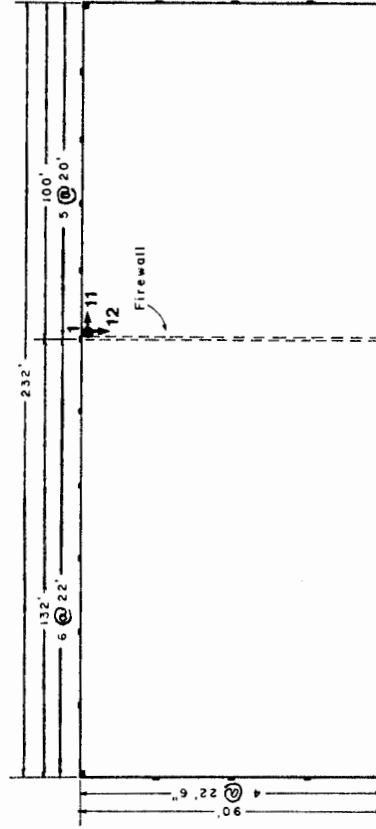
SENSOR LOCATIONS



Roof Plan



S/N Elevation



Ground Level Plan

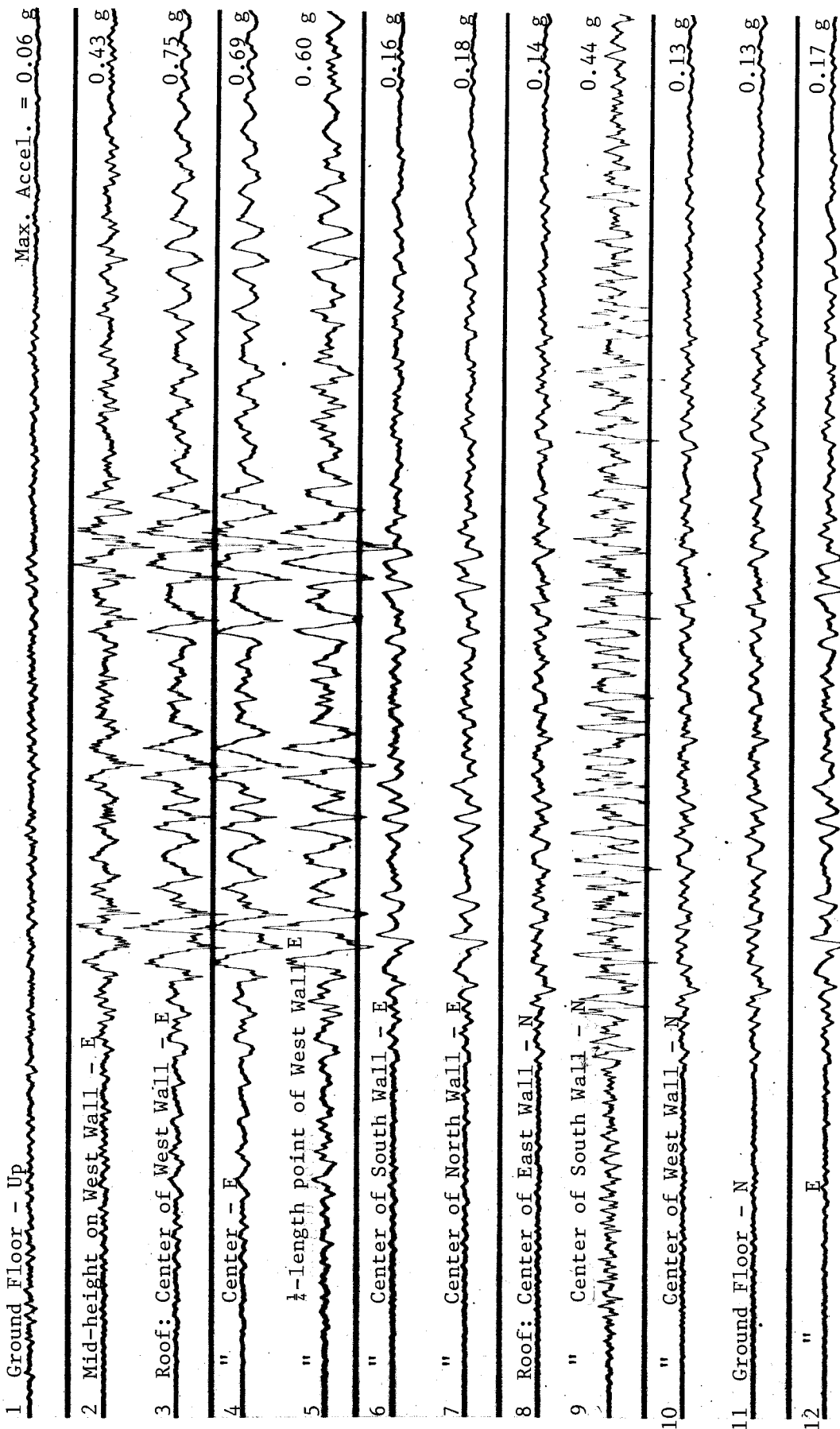
Sensors 1, 11, 12 mounted on floor slab  
Sensor 4 mounted on Glu-Lam beam  
Other sensors mounted on wall



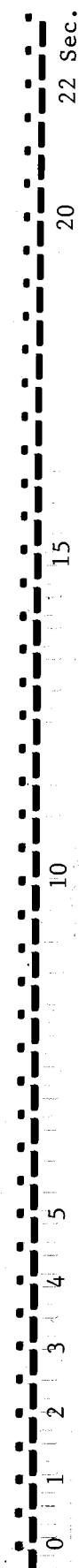
Structure Reference  
Orientation: N = 0°

Redlands - 1-story Warehouse  
(CSMIP Station 23495)

Record 23495-Coll15-92182.05

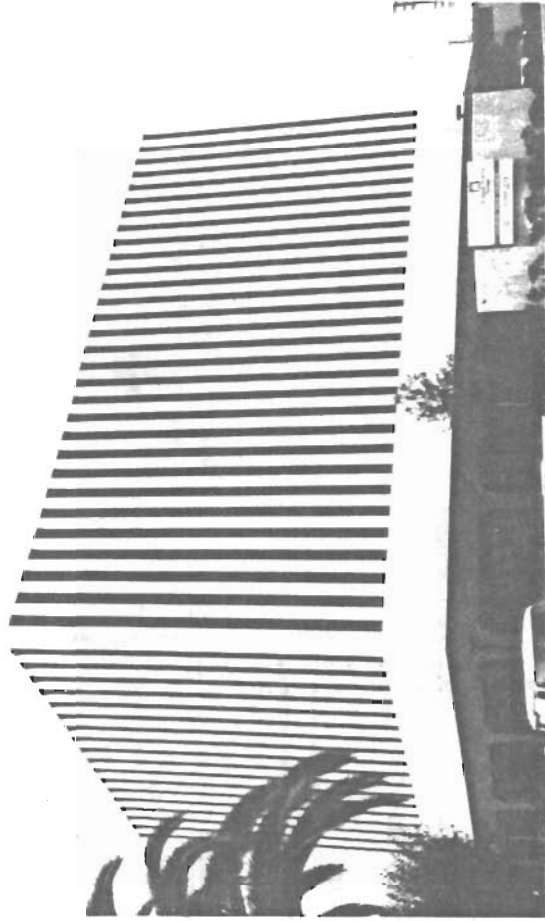


Structure Reference Orientation: N=0°





**Redlands - 7-story Commercial Bldg.**  
(CSMIP Station No. 23481)



No. of Stories above/below ground: **7/1**

Plan Shape: Rectangular

Base Dimensions: 228' x 250'

Typical Floor Dimensions: 140' x 93'

Design Date: 1980

Construction Date: 1980

Vertical Load Carrying System:

2.5" concrete slabs over steel decks supported by steel beams and columns.

Lateral Force Resisting System:

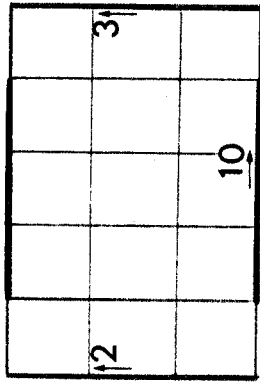
Perimeter moment resisting steel frames.

Foundation Type:

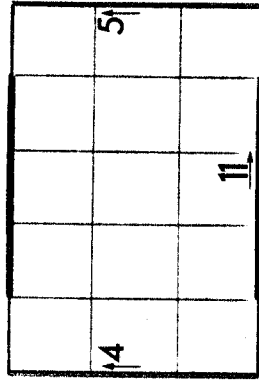
Spread footings.

Redlands - 7-story Commercial Bldg.  
(CSMP Station No. 23481)

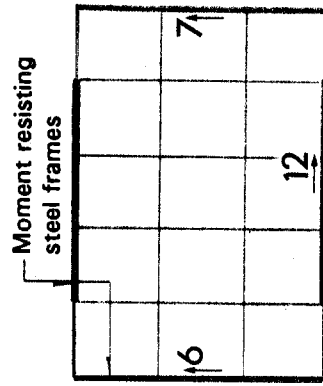
SENSOR LOCATIONS



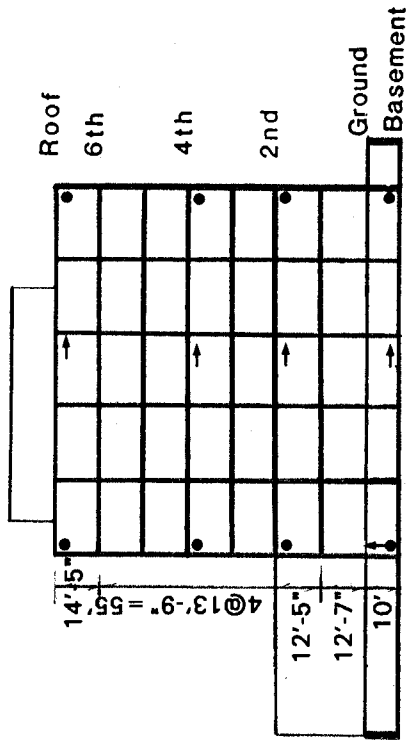
Roof Plan



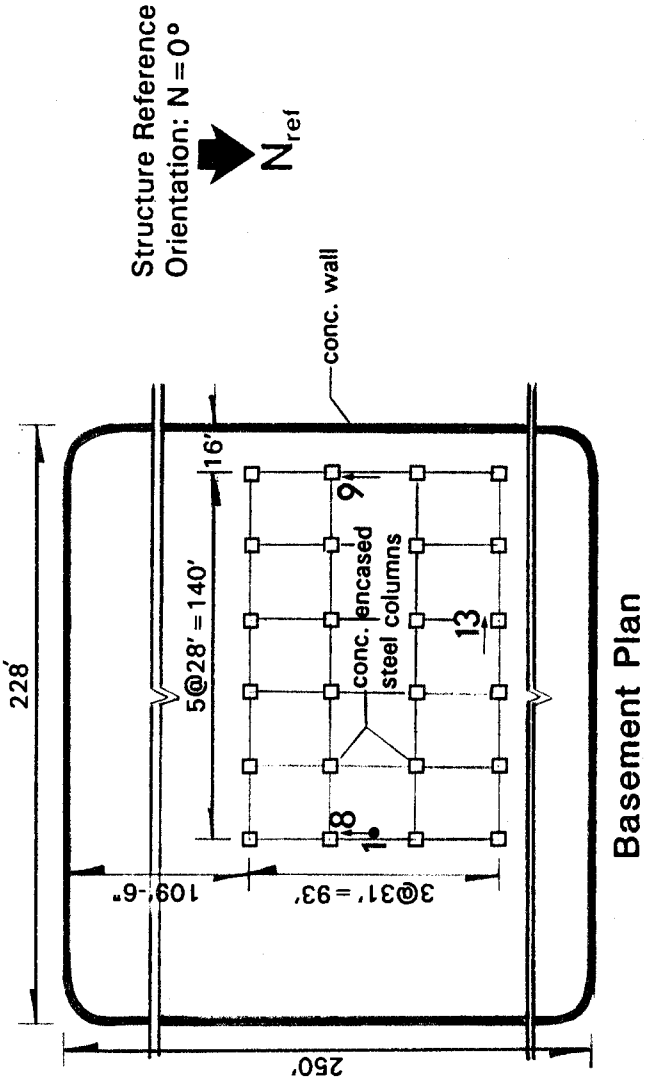
4th Floor Plan



2nd Floor Plan



E/W Elevation

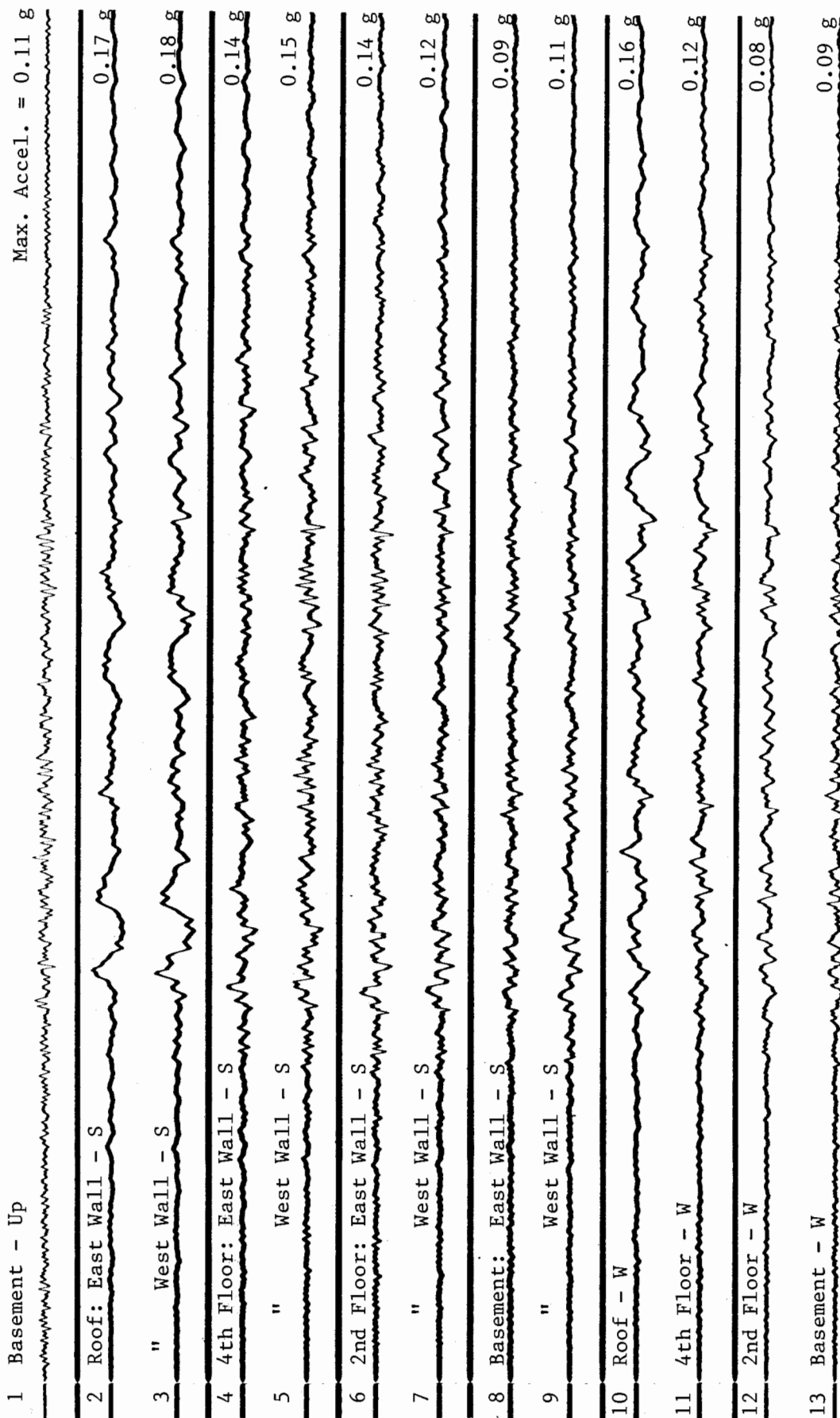


Basement Plan

Redlands - 7-story Commercial Bldg.

(CSMIP Station 23481)

Record 23481-C0245-92182.04



Structure Reference Orientation: N=0°





**Palm Springs - 4-story Hospital  
(CSMIP Station No. 12299)**

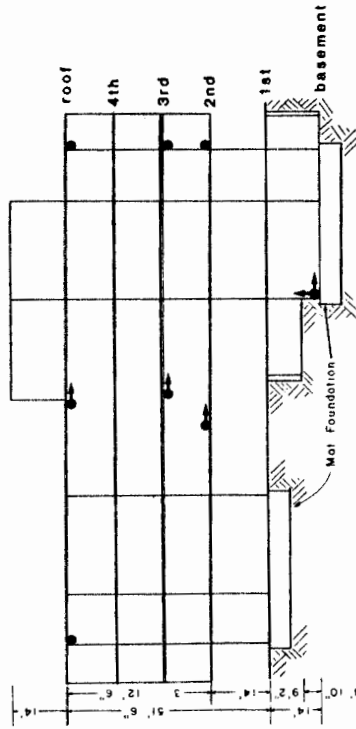


No. of Stories above/below ground:  
4/partial basement  
Plan Shape: Rectangular  
Base Dimensions: 147' x 79'  
Typical Floor Dimensions: 147' x 79'  
Design Date: 1967  
Construction Date: 1974

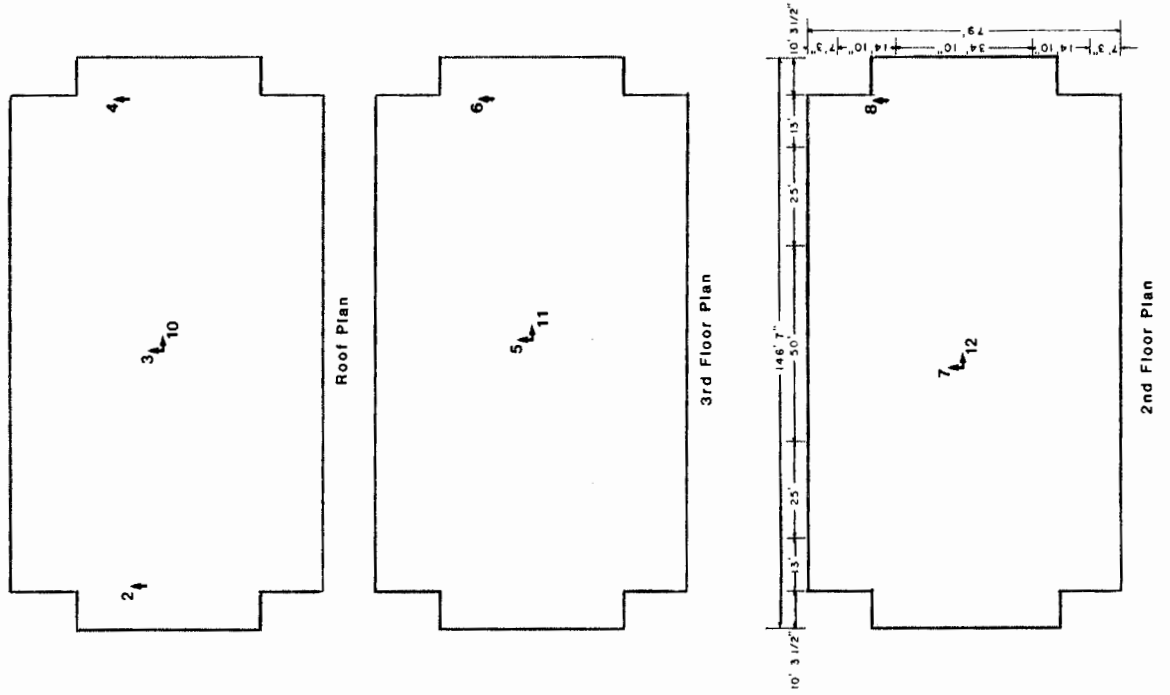
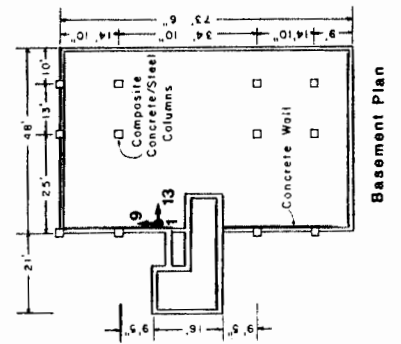
Vertical Load Carrying System:  
4"-5" concrete slabs supported by steel  
frame; steel columns encased in concrete  
between basement level and first floor.  
Lateral Force Resisting System:  
Distributed steel moment frames.  
Foundation Type:  
Spread footings.

**Palm Springs - 4-story Hospital**  
(CSMIP Station No. 12299)

**SENSOR LOCATIONS**



Structure Reference  
Orientation: N = 0°



Palm Springs - 4-story Hospital  
(CSMIP Station 12299)

Record 1229-C0192-92180.05

1 Basement - Up

Max Accel. = 0.06 g

2 Roof: South Wall - W 0.15 g

3 " Center - W 0.18 g

4 " North Wall - W 0.18 g

5 3rd Floor: Center - W 0.10 g

6 " North Wall - W 0.13 g

7 2nd Floor: Center - W 0.09 g

8 " North Wall - W 0.08 g

9 Basement - W 0.06 g

10 Roof: Center - N 0.19 g

11 3rd Floor: Center - N 0.11 g

12 2nd Floor: Center - N 0.12 g

13 Basement - N 0.08 g

Structure Reference Orientation: N=0°





**Rancho Cucamonga - 4-story Law & Justice Center**  
(CSMIP Station No. 23497)



No. of Stories above/below ground: 4/1  
Plan Shape: Rectangular  
Base Dimensions: 414' x 110'  
Typical Floor Dimensions: 414' x 110'  
Design Date: 1983  
Construction Date: 1985

**Vertical Load Carrying System:**

Concrete slabs over steel deck supported by steel frames on elastomeric bearings.

**Lateral Force Resisting System:**

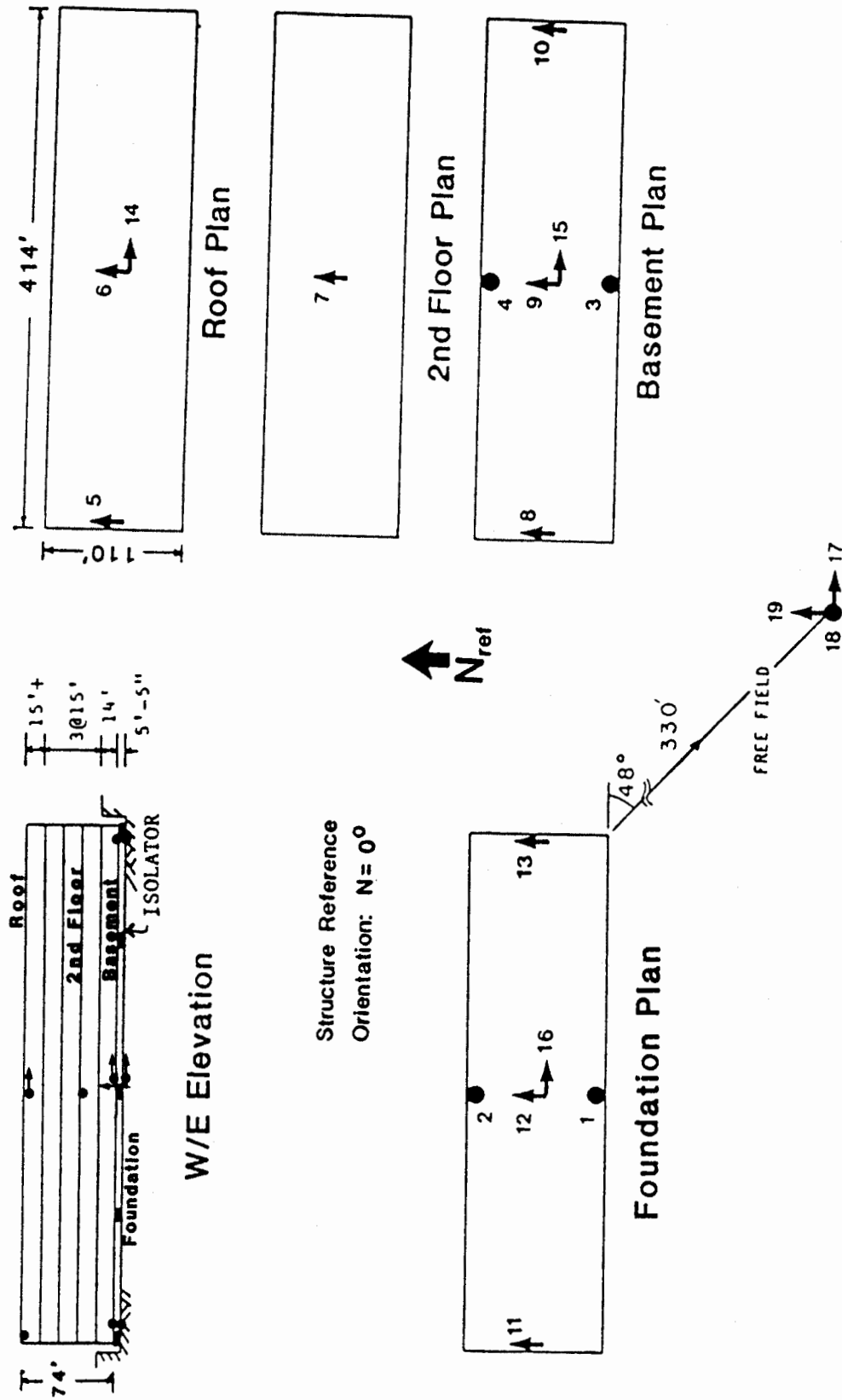
Braced steel frames in upper four stories; concrete shear walls at basement; base isolated on elastomeric bearings.

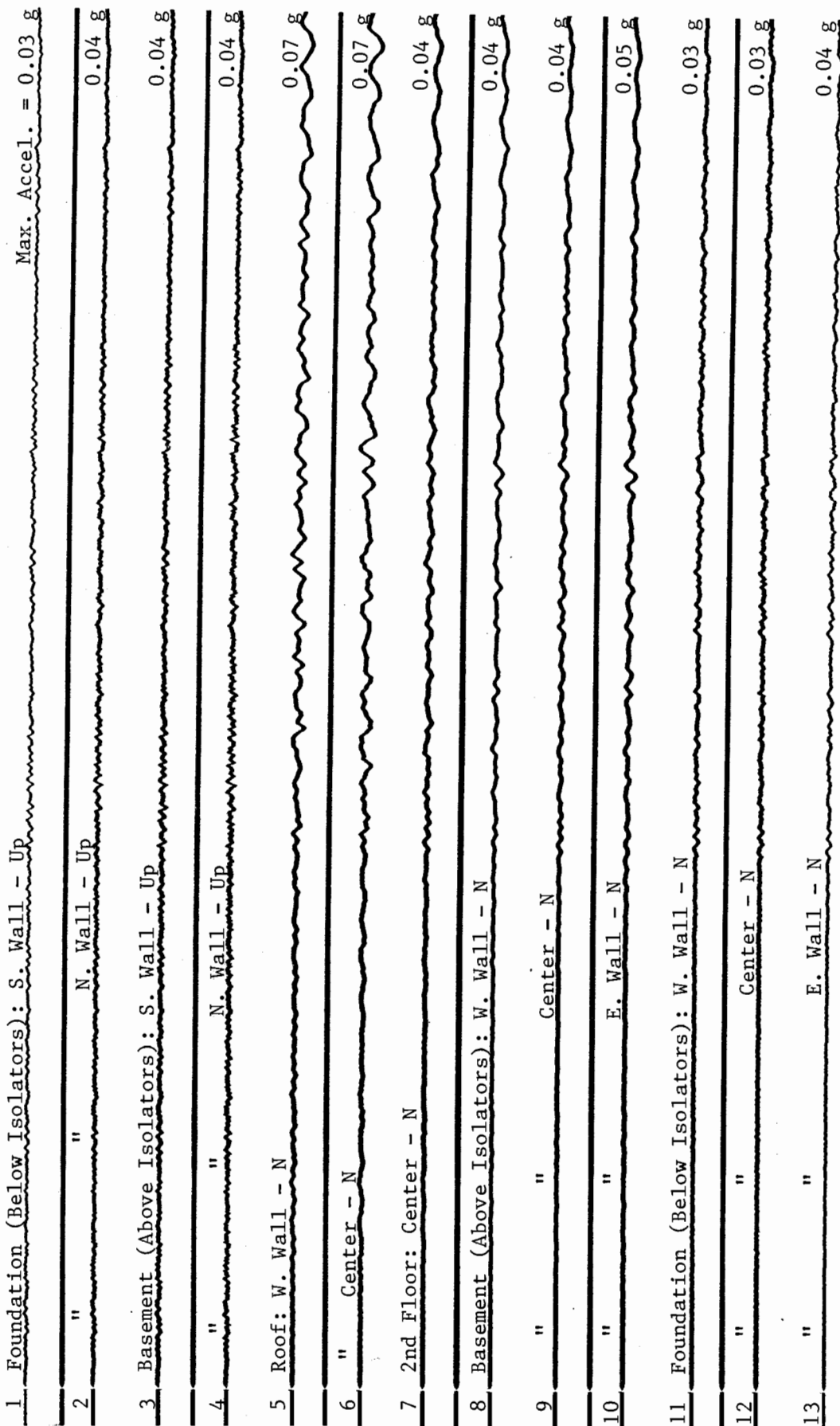
**Foundation Type:**

Spread footings.

Rancho Cucamonga - Law and Justice Center  
(CSMIP Station No. 23497)

SENSOR LOCATIONS





Structure Reference Orientation: N=0°



Rancho Cucamonga - Law & Justice Center (Sensors 14-19)  
(CSMIP Station 23497)

Record 23497-C0118-92180.03

14 Roof: Center - E Max. Accel. = 0.07 g

15 Basement (Above Isolators): Center - E 0.02 g

16 Foundation (Below Isolators): Center - E 0.06 g

17 Free Field E 0.05 g

18 Free Field - Up 0.04 g

19 Free Field - N 0.04 g

Structure Reference Orientation: N=0°

0 1 2 3 4 5 10 15 20 22 Sec.

**Seal Beach - 8-story Office Bldg.**  
(CSMIP Station No. 14578)



No. of Stories above/below ground: 8/1

Plan Shape: Rectangular

Base Dimensions: 245' x 137'

Typical Floor Dimensions: 245' x 137'

Design Date: 1966

Construction Date: 1967 & 1990

**Note:** In 1989-90, the building was strengthened by adding an exterior ductile concrete frame and isolating the columns.

Vertical Load Carrying System:

Concrete waffle slabs supported by concrete columns on load-bearing isolators.

Lateral Force Resisting System:

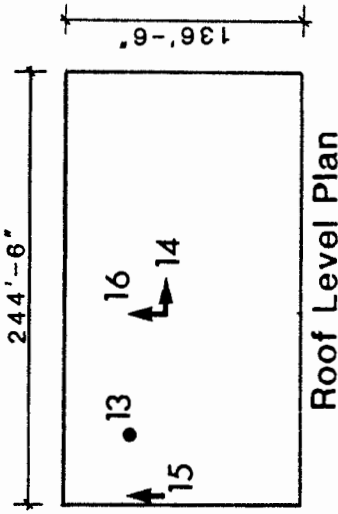
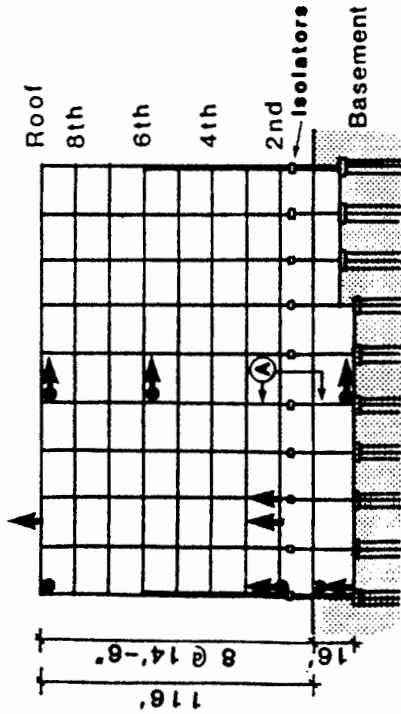
Exterior ductile concrete frames, isolated by rubber/steel laminated bearings between the first and second floors.

Foundation Type:

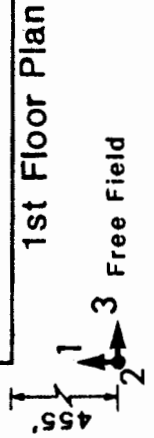
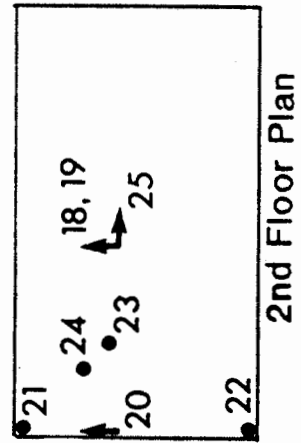
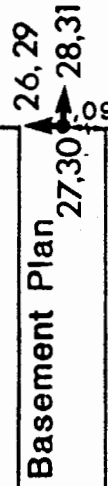
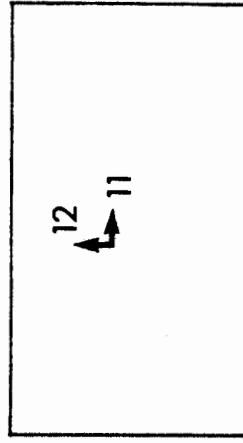
Cast-in-place concrete piles (about 50' long).

Seal Beach - 8-story Office Bldg.  
(CSMIP Station No. 14578)

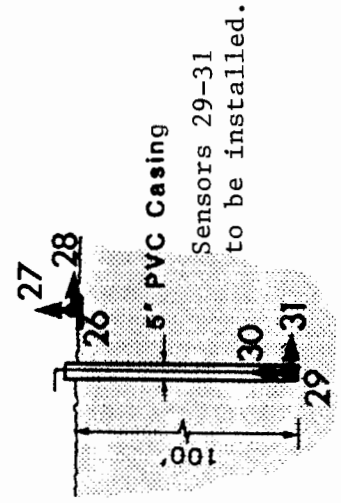
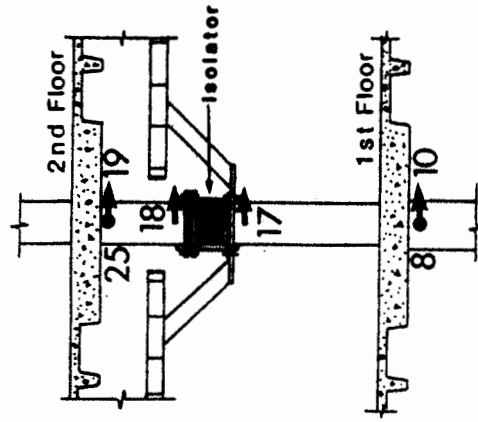
SENSOR LOCATIONS



W/E Elevation

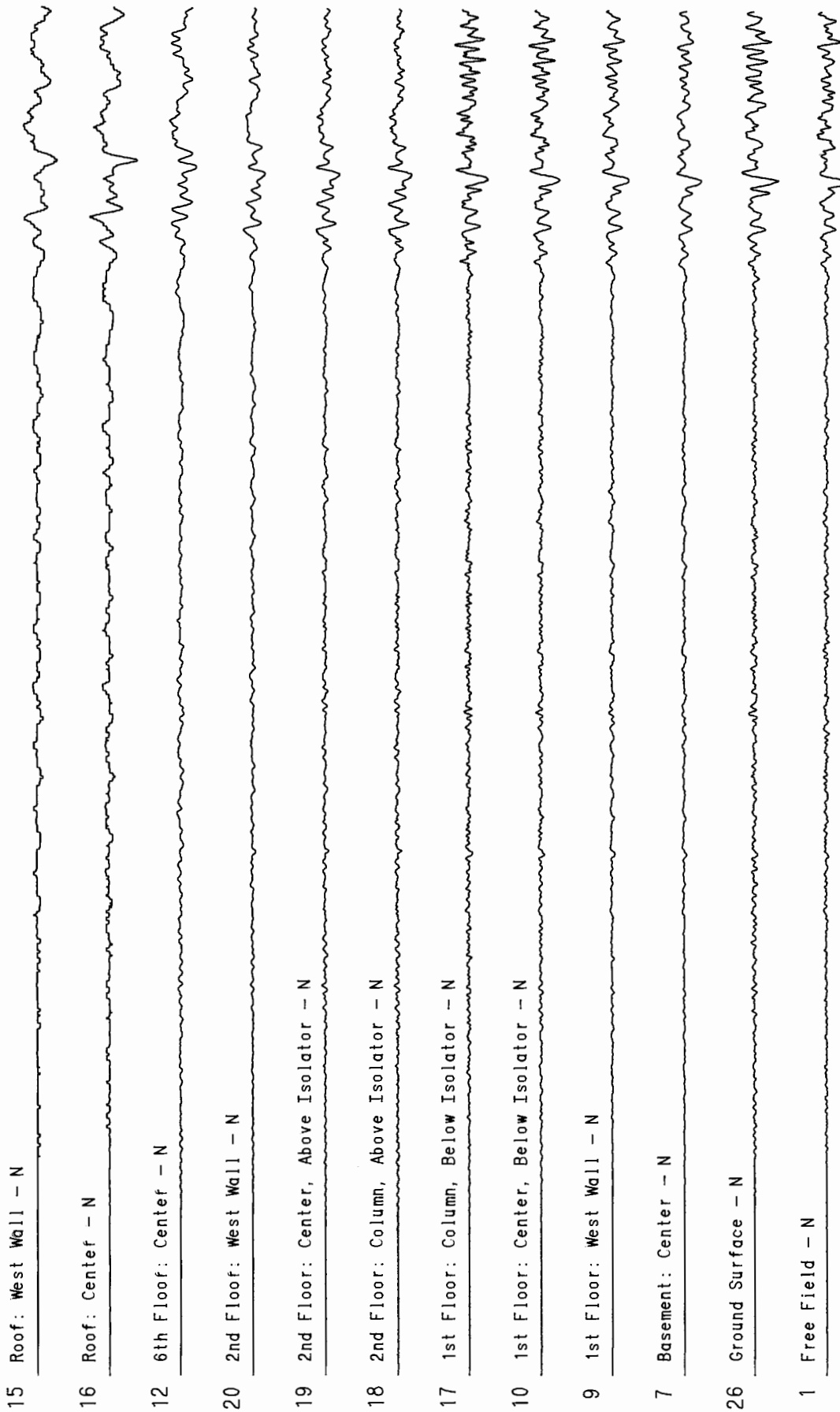


Structure Reference  
Orientation: N = 0°



Seal Beach - 8-story Office Bldg.  
(CSMIP Station 14578)

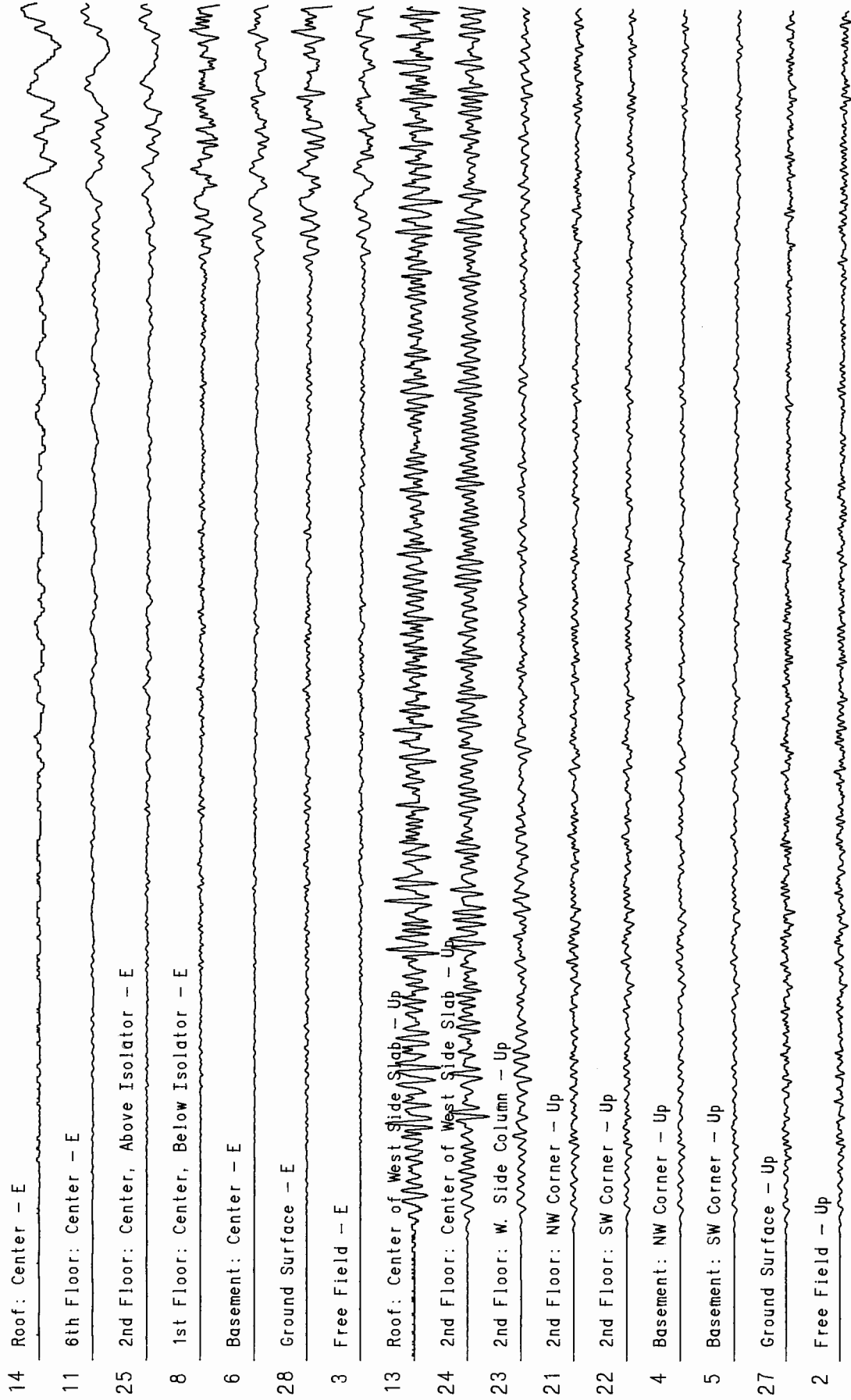
RECORD 14578-CS101-92180.11



This page plotted with 4.x vertical exaggeration.

Seal Beach - 8-story Office Bldg.  
(CSMIP Station 14578)

RECORD 14578-CS101-92180.11



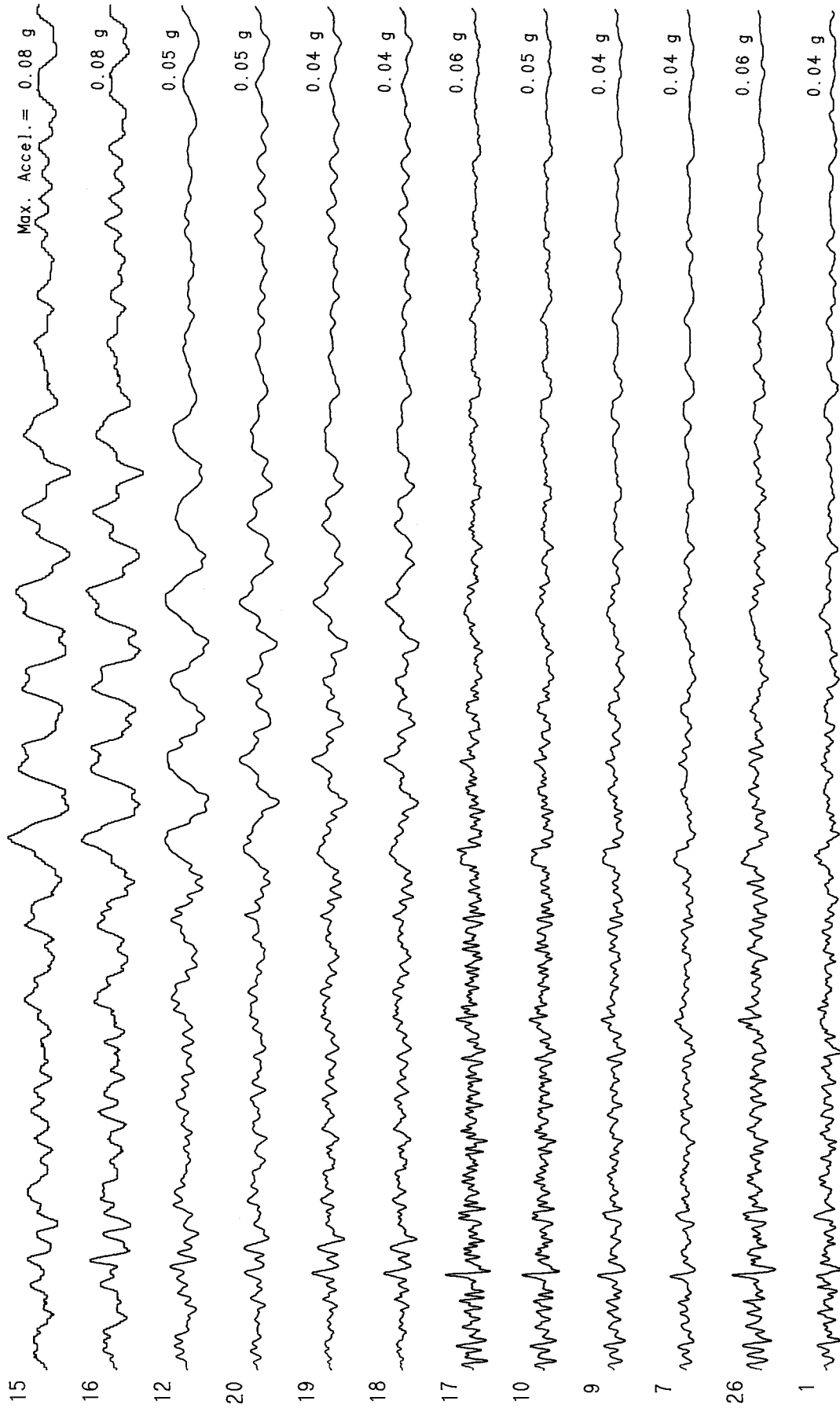
Structure Reference Orientation: N=0°

0 1 2 3 4 5 10 15 20 22 Sec.

This page plotted with 4.x vertical exaggeration.

Seal Beach - 8-story Office Bldg.  
(CSMIP Station 14578)

RECORD 14578-CS101-92180.11

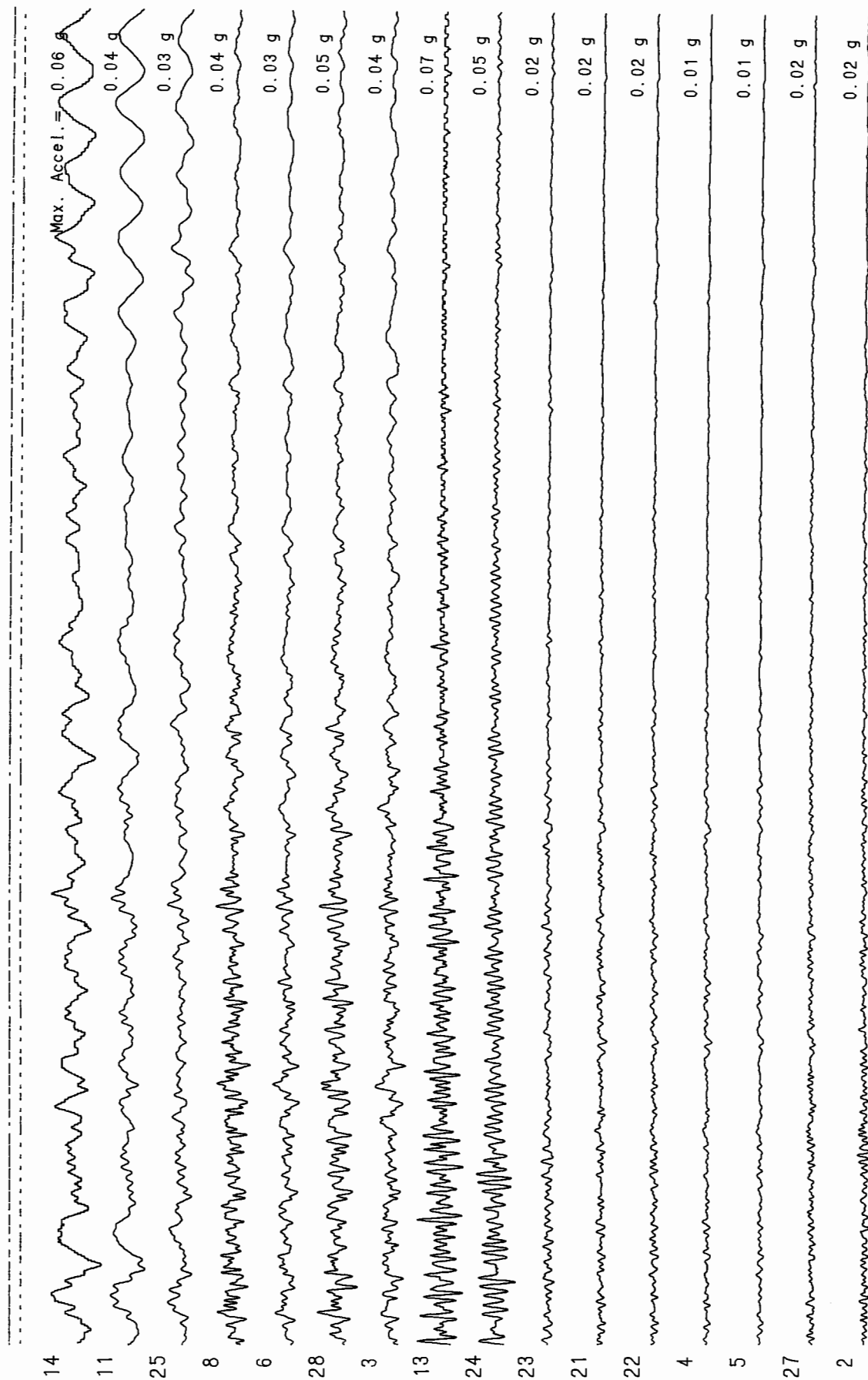


22 25 30 35 40 44 Sec.

This page plotted with 4.x vertical exaggeration.

Seal Beach - 8-story Office Bldg.  
(CSMIP Station 14578)

RECORD 14578-CS101-92180.11



22

25

30

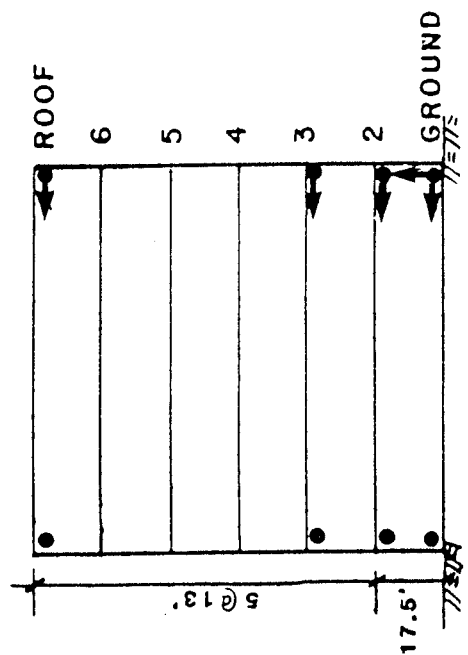
35

40

44 Sec.

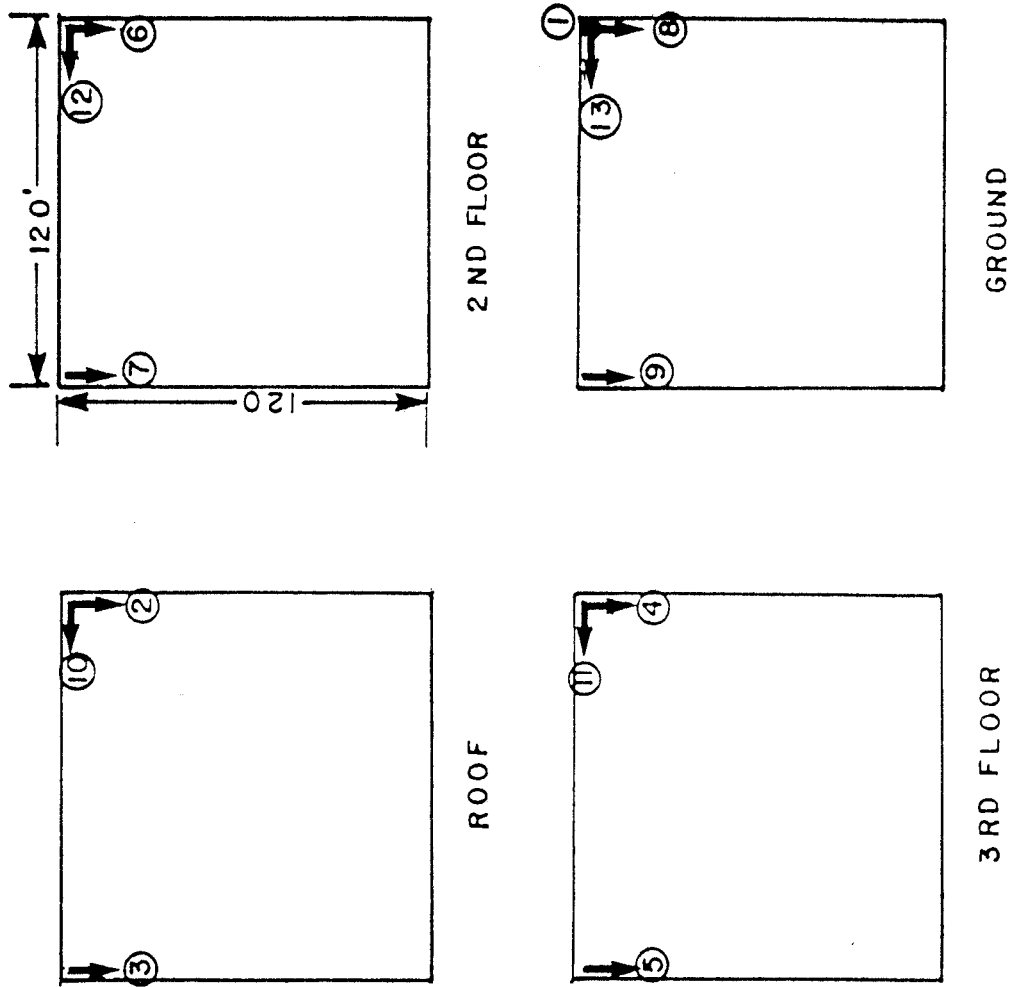
This page plotted with 4.x vertical exaggeration.

# Burbank - 6-story Commercial Bldg. (CSMIP Station No. 24370)



Structure Reference  
Orientation: N = 315°

## SENSOR LAYOUT



Burbank - 6-story Commercial Bldg.

(CSMIP Station 24370)

Record 24370-C0196-92192.03

1 Ground Floor: NW Corner - Up

2 Roof: NW Corner - E

3 " SW Corner - E

4 3rd Floor: NW Corner - E

5 " SW Corner - E

6 2nd Floor: NW Corner - E

7 " SW Corner - E

8 Ground Floor: NW Corner - E

9 " SW Corner - E

10 Roof: NW Corner - S

11 3rd Floor: NW Corner - S

12 2nd Floor " - S

13 Ground Floor: " - S

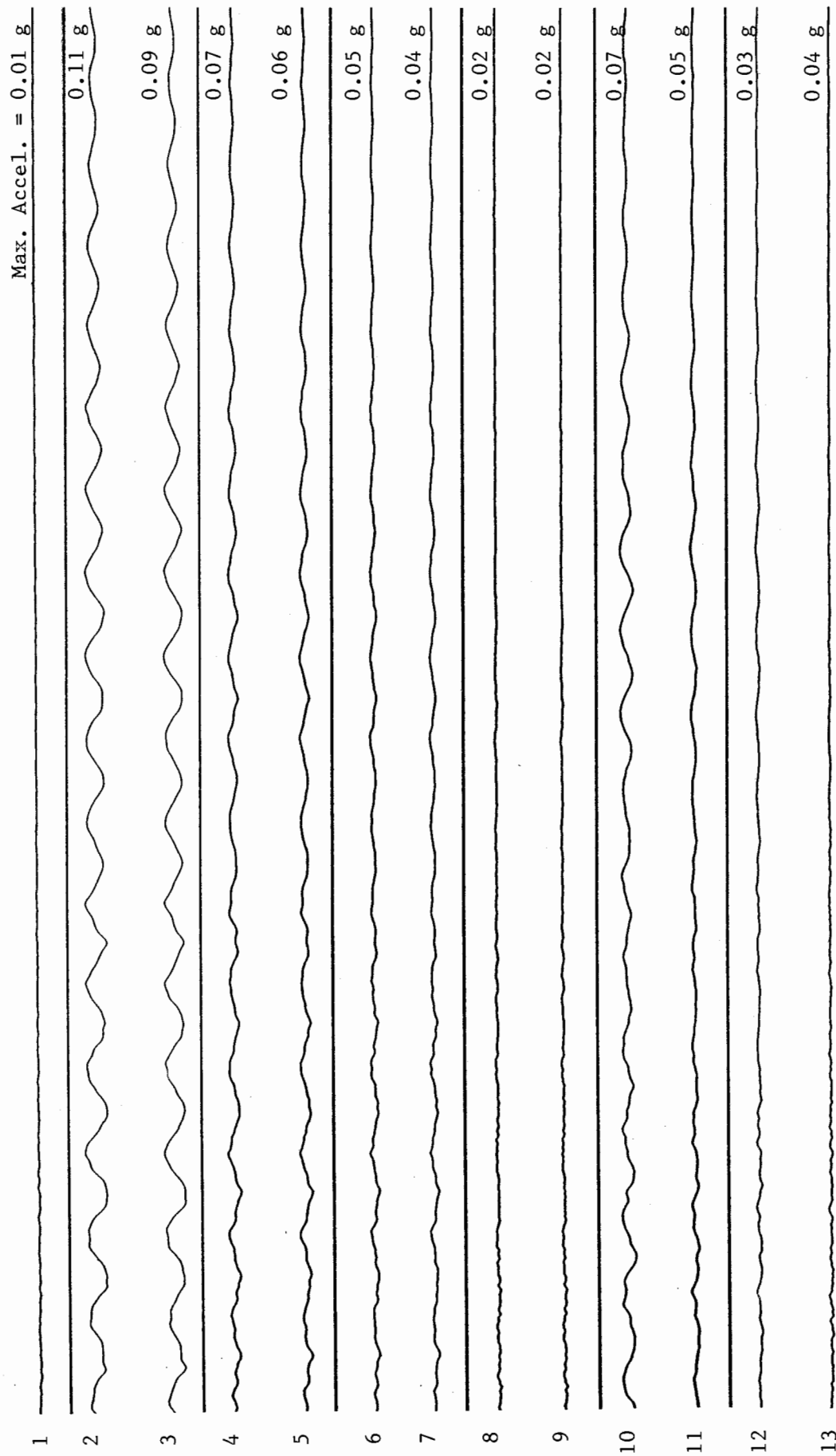
Structure Reference Orientation: N=315°

0 1 2 3 4 5 10 15 20 22 Sec.

Burbank - 6-story Commercial Bldg.

(CSMIP Station 24370)

Record 24370-C0196-92192.03

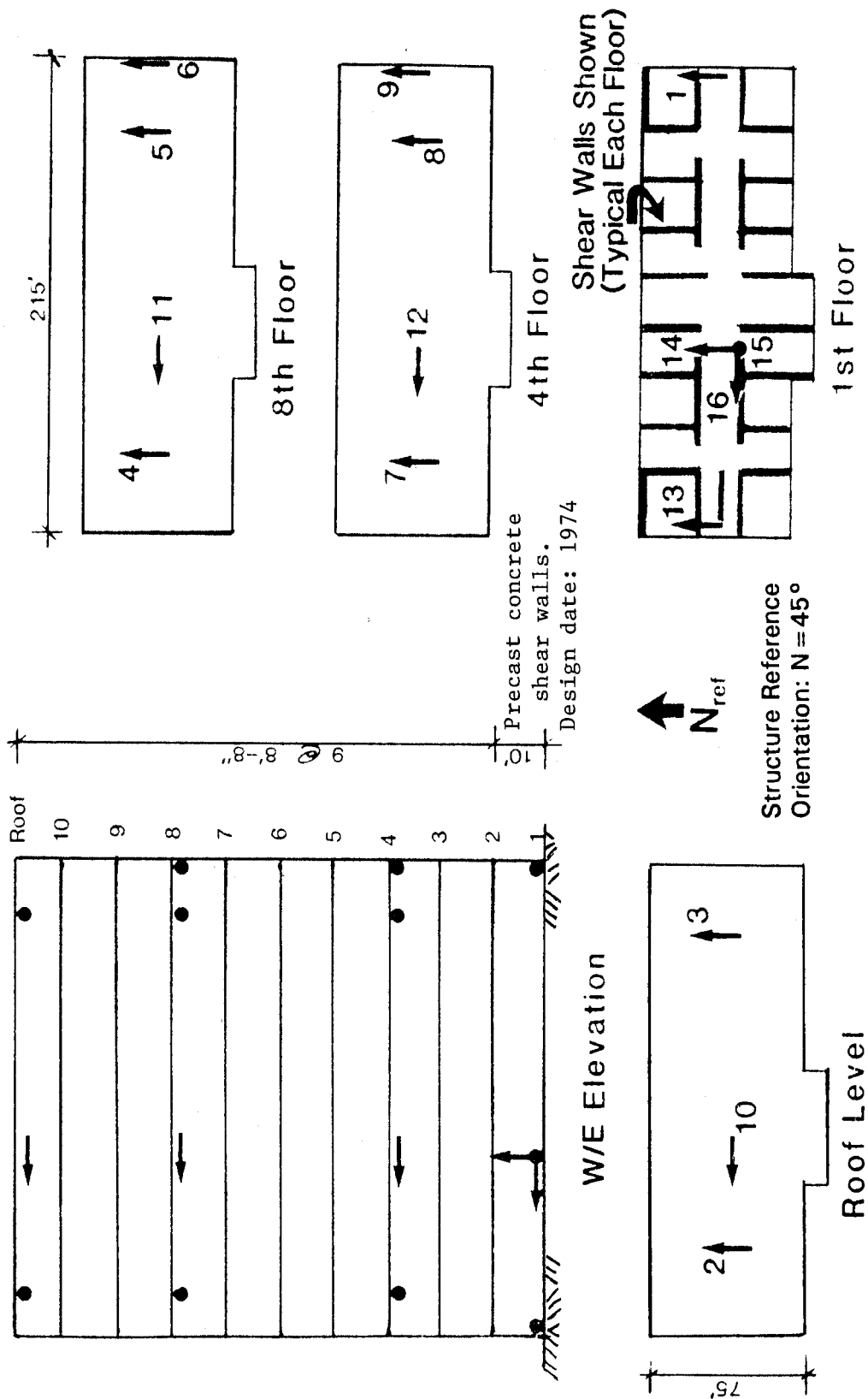


Structure Reference Orientation: N=315°



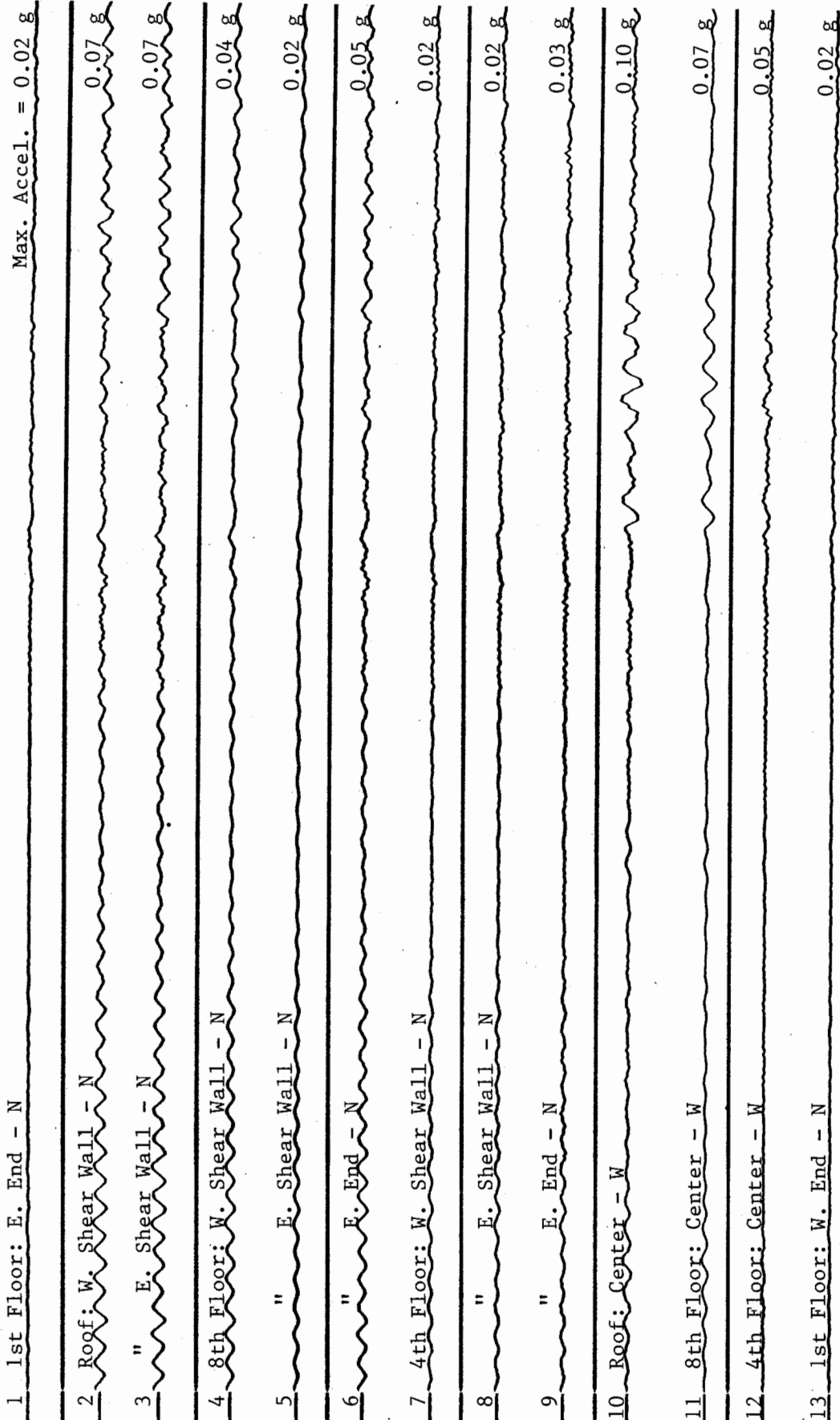
**Burbank - 10-story Residential Bldg.**  
(CSMIP Station No. 24385)

**SENSOR LAYOUT**



Burbank - 10-story Residential Bldg  
(CSMIP Station 24385)

Record 24385-C0193-92192.03

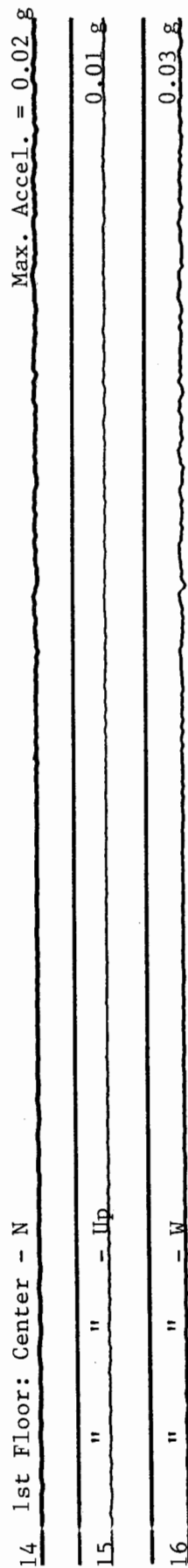


Structure Reference Orientation: N=45°

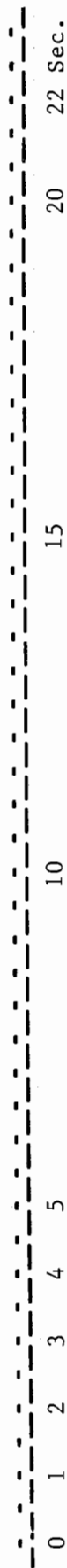


Burbank - 10-story Residential Bldg.  
(CSMIP Station 24385)

Record 24385-S3486-92192.03

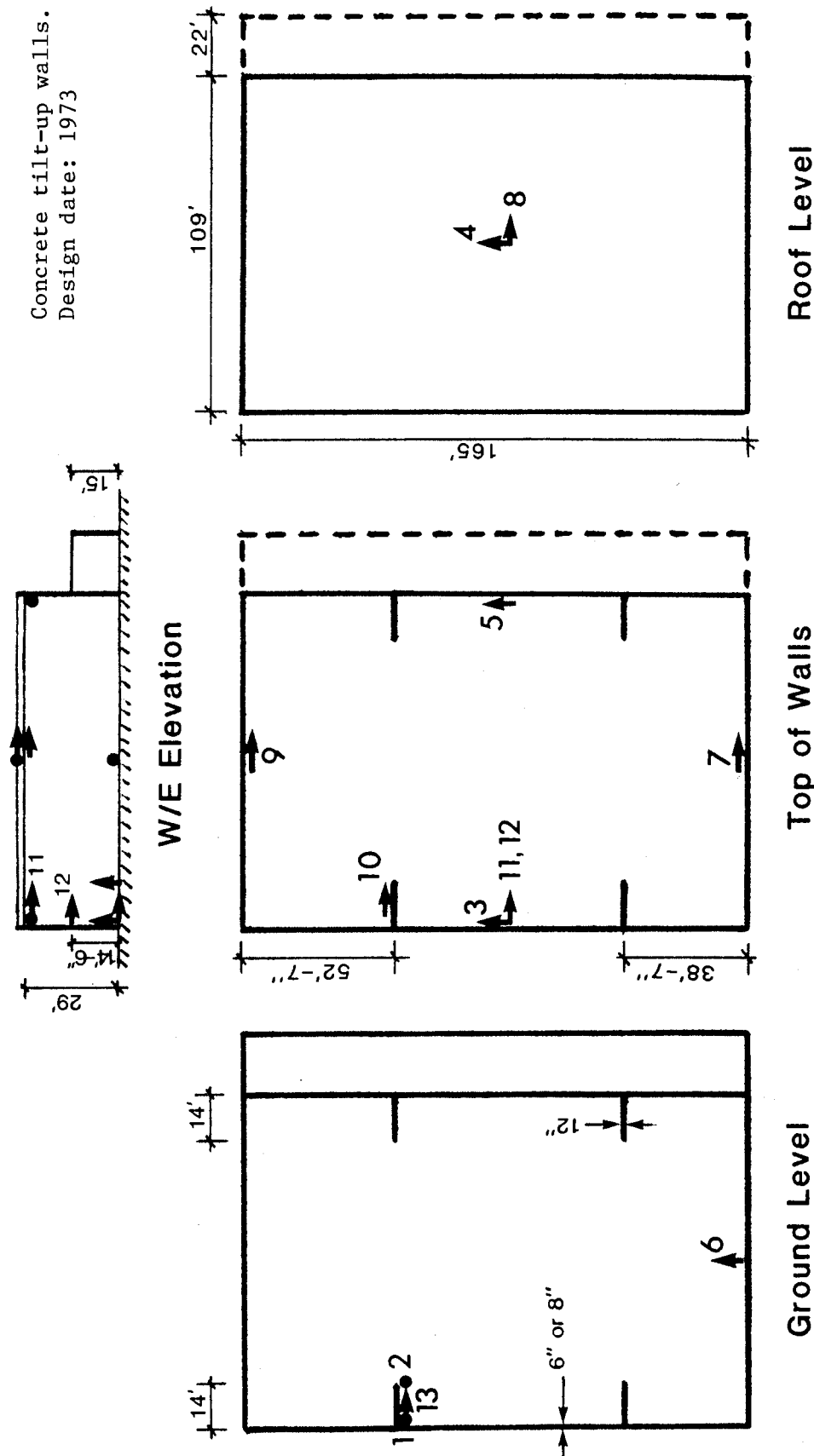


Structure Reference Orientation: N=45°



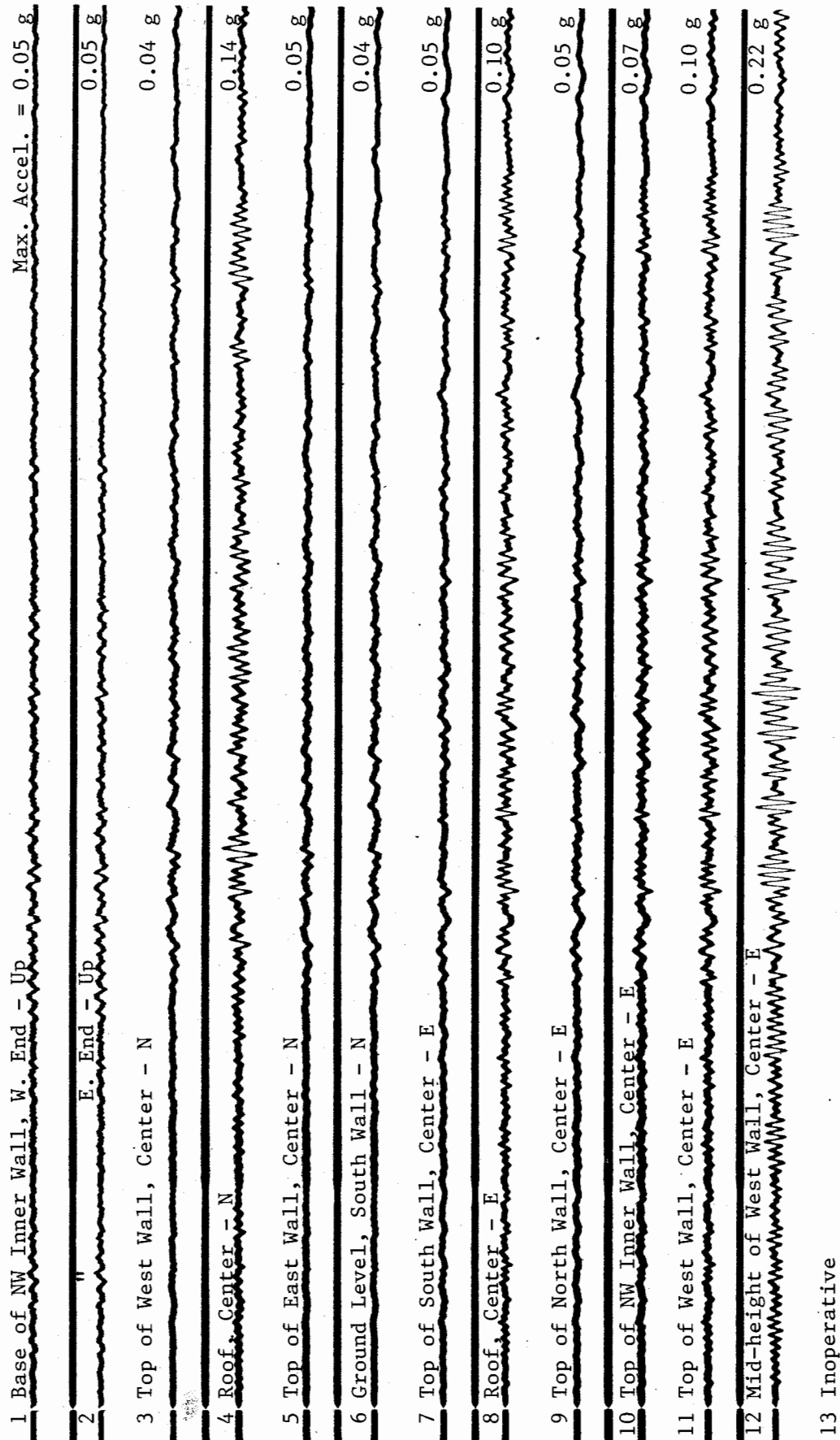
Colton - 1-story School Gym  
(CSMIP Station No. 23540)

SENSOR LOCATIONS

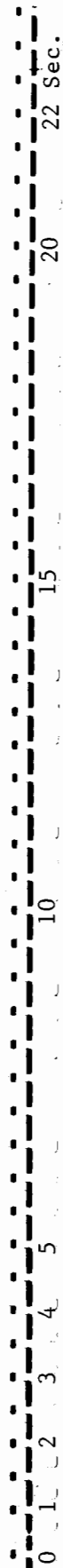


Colton - 1-story School Gym  
(CSMIP Station 23540)

Record 23540-C0286-92181.04

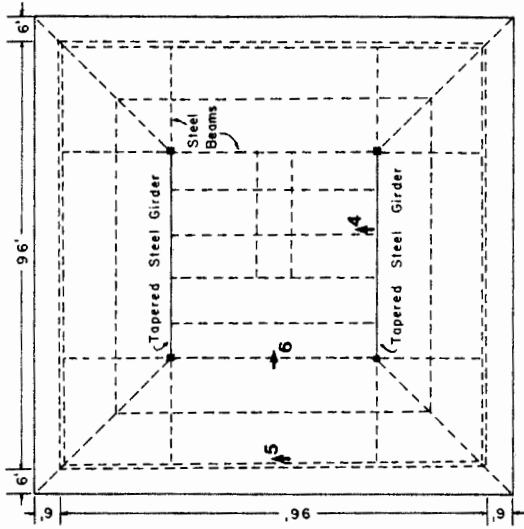


Structure Reference Orientation: N=5°

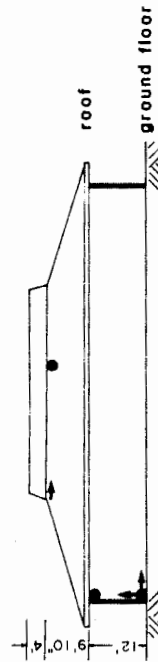


# Hemet - 1-story Library (CSMIP Station No. 12266)

## SENSOR LAYOUT

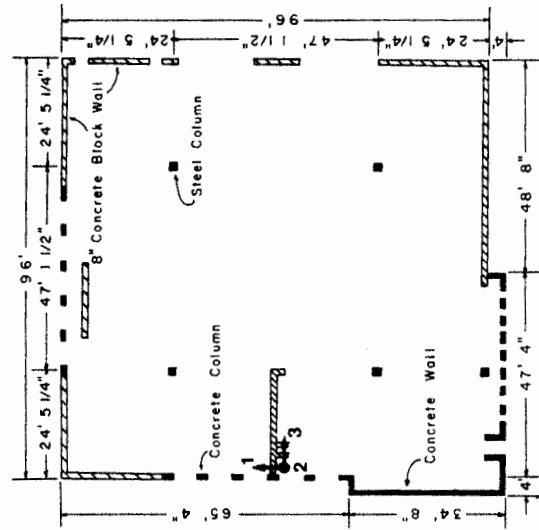


Roof Plan



South/North Section

Masonry block and concrete  
shear walls along the  
perimeter.  
Design date: 1970



Ground Floor Plan

↑ N  
Structural Reference  
Orientation: N = 0°

Hemet - 1-story Library  
(CSMIP Station 12266)

Record 12266-C0111-92183.04



1 Ground Floor: South Wall - W



2 " " - Up



3 " " - N



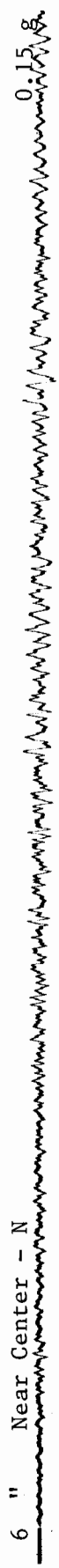
4 Roof: Near Center - W



5 " South Wall - W



6 " Near Center - N



Structure Reference Orientation: N=0°





1 Basement: Center - W Max. Accel. = 0.04 g

2 " " - Up 0.05 g

3 " " - N 0.06 g

4 " East Wall - N 0.04 g

5 Roof: Center - N 0.14 g

6 " " - W 0.09 g

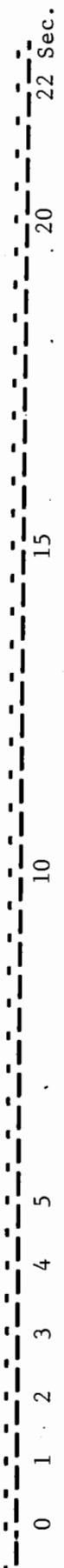
7 " East Wall - N 0.10 g

8 2nd Floor: Center - N 0.08 g

9 " " - W 0.05 g

10 " East Wall - N 0.05 g

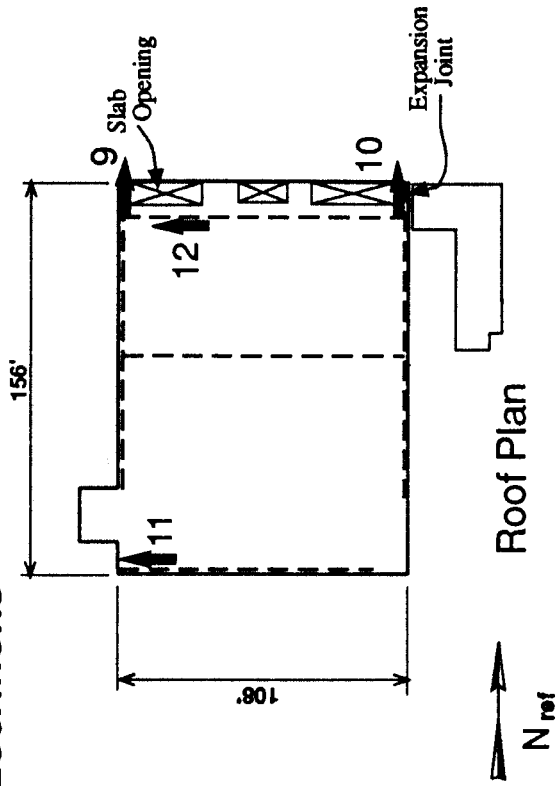
Structure Reference Orientation: N=315°



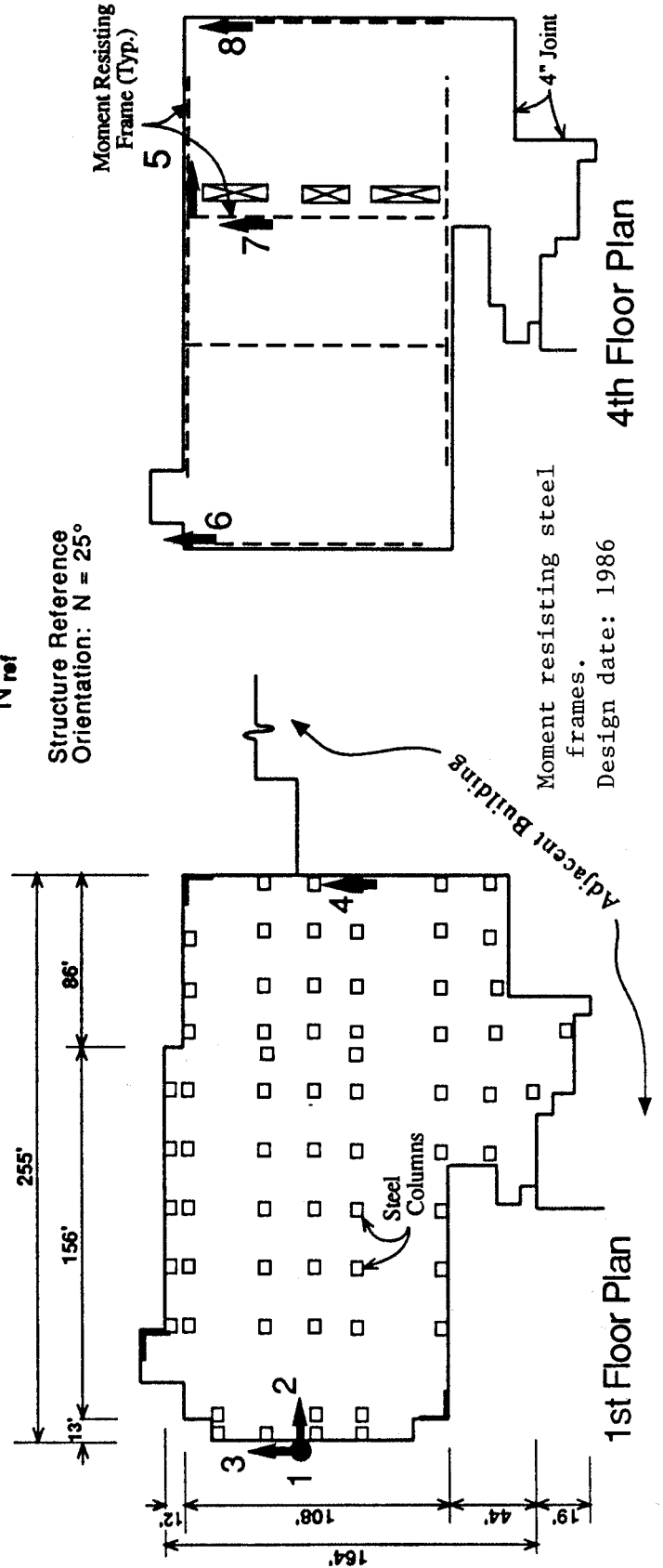
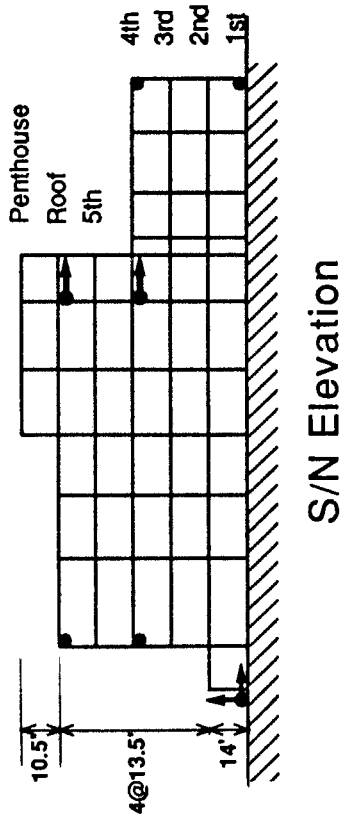
0 1 2 3 4 5 10 15 20 22 Sec.

Lancaster - 5-story Hospital  
(CSMIP Station No. 24609)

SENSOR LOCATIONS

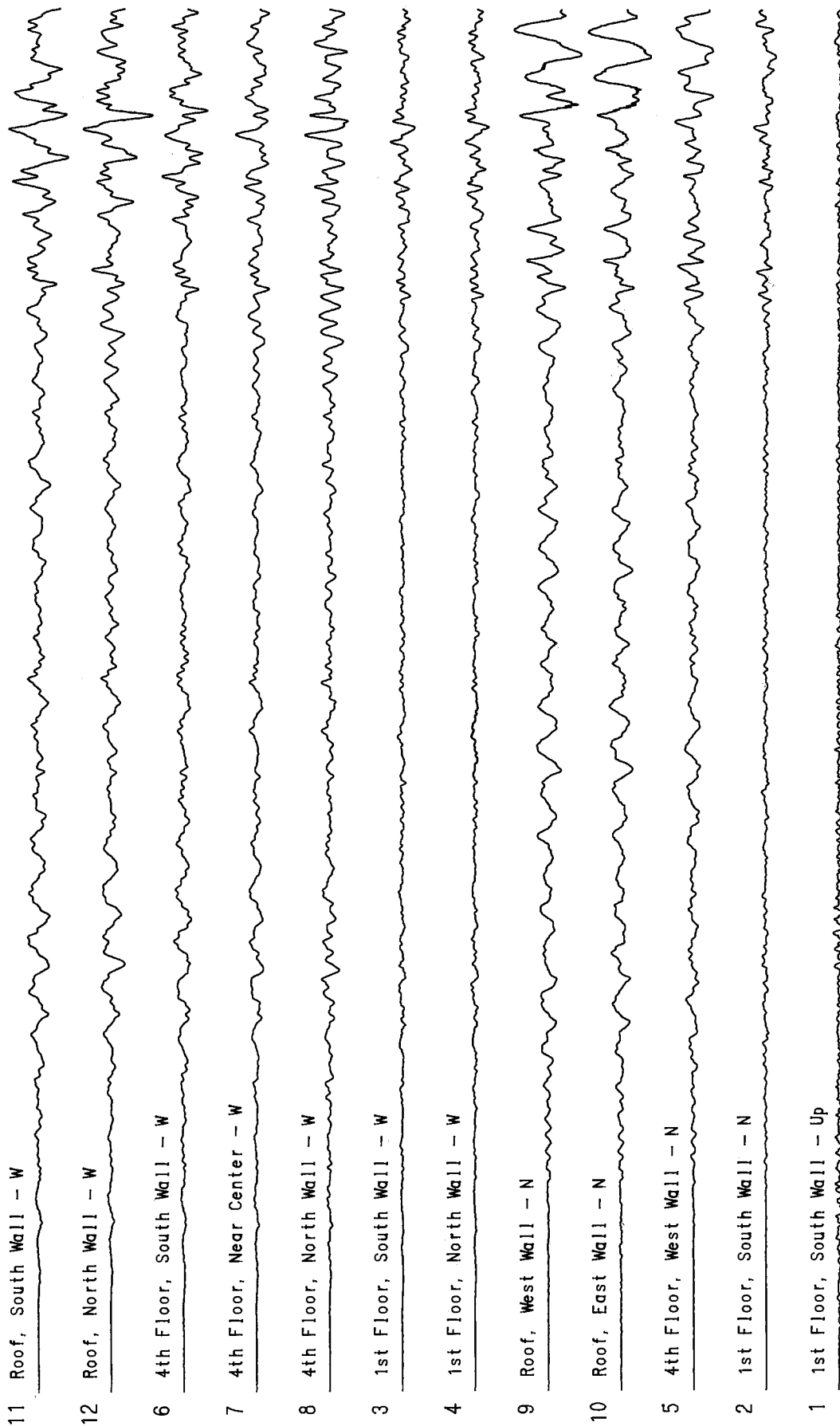


Structure Reference  
Orientation: N = 25°



Lancaster - 5-story Hospital  
(CSMIP Station 24609)

RECORD 24609-CS119-92181.07



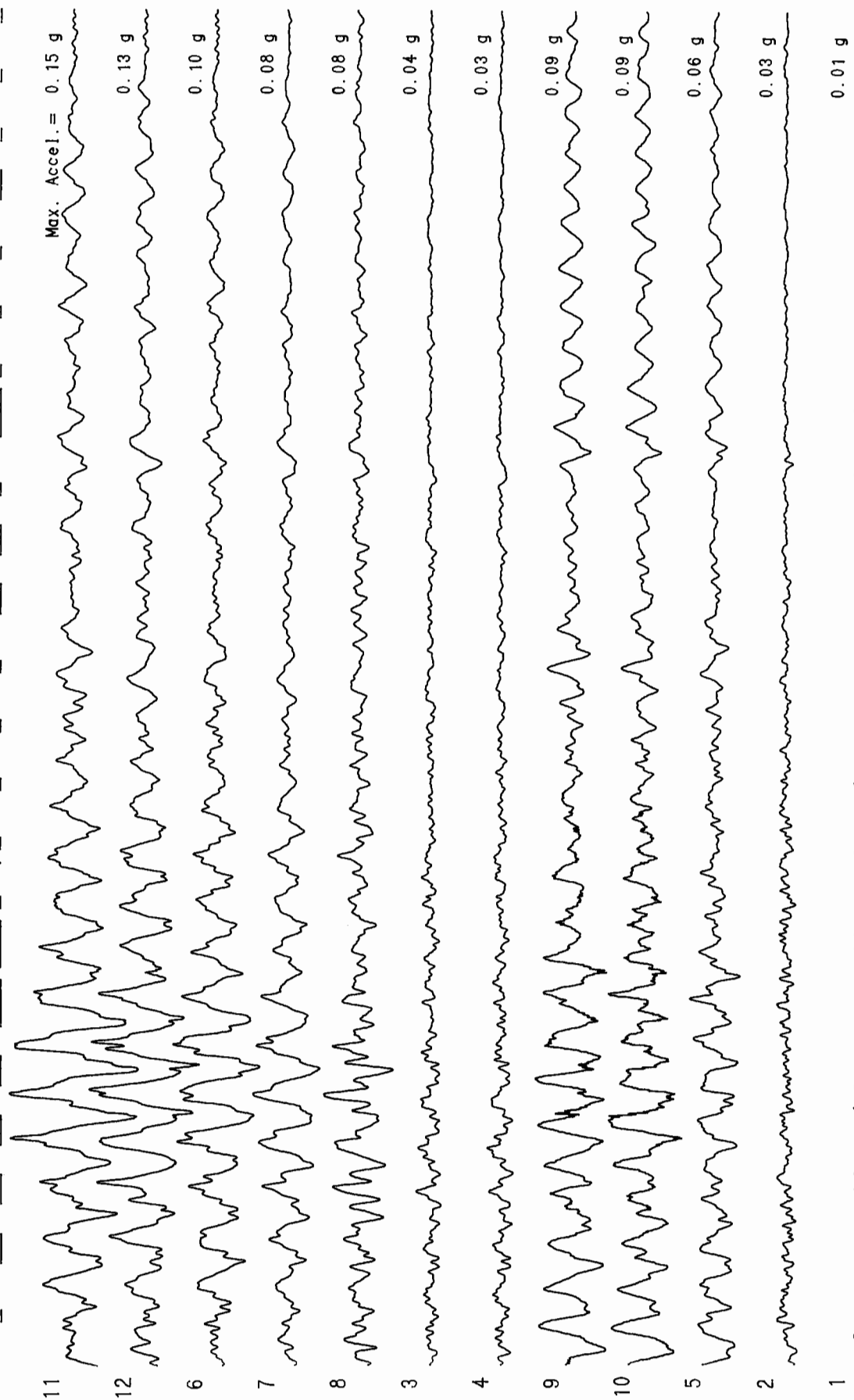
Structure Reference Orientation: N=25°

0 1 2 3 4 5 10 15 20 22 Sec.

This page plotted with 4.x vertical exaggeration.

Lancaster - 5-story Hospital  
(CSMIP Station 24609)

RECORD 24609-CS119-92181.07



22 25 30 35 40 44 Sec.

This page plotted with 4.x vertical exaggeration.

Lancaster - 3-story Office Bldg.

(CSMIP Station 24517)

Record 24517-C0280-92181.03

1 Ground Floor: Up

Max. Accel. - 0.02 g

2 Roof: Center Shear Wall - E

0.04 g

3 " Mid-span - E

0.09 g

4 " North Shear Wall - E

0.03 g

5 3rd Floor: Center Shear Wall - E

0.03 g

6 " Mid-span - E

0.07 g

7 " North Shear Wall - E

0.03 g

8 2nd Floor: Central Shear Wall - E

0.04 g

9 Ground Floor: E

0.03 g

10 Roof: South Wall - N

0.03 g

11 3rd Floor: South Wall - N

0.03 g

12 2nd Floor: South Wall - N

0.03 g

13 Ground Floor: N

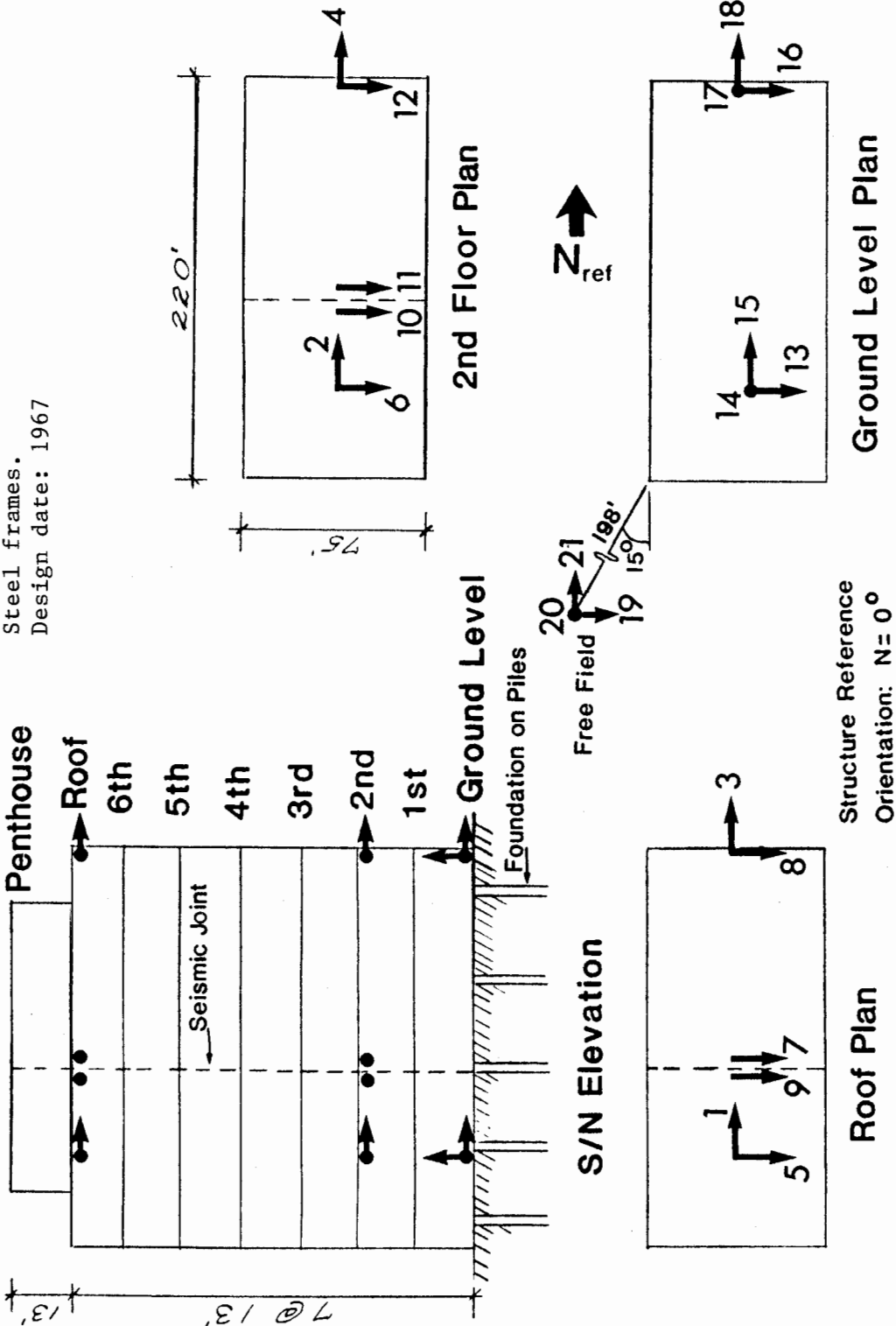
0.03 g

Structure Reference Orientation: N=25°



Long Beach - 7-story Office Bldg.  
(CSMIP Station No. 14323)

SENSOR LOCATIONS



Long Beach - 7-story Office Bldg.  
(CSMIP Station No. 14323)

Record 14323-C0154-92224.04

1 S. Bldg. Roof: Center - N

2 " 2nd Floor: Center - N

3 N. Bldg. Roof: North Wall - N

4 " 2nd Floor: North Wall - N

5 S. Bldg. Roof: Center - E

6 " 2nd Floor: Center - E

7 N. Bldg. Roof: Seismic Joint - E

8 " North Wall - E

9 S. Bldg. Roof: Seismic Joint - E

10 " 2nd Floor: Seismic Joint - E

11 N. Bldg. 2nd Floor: Seismic Joint - E

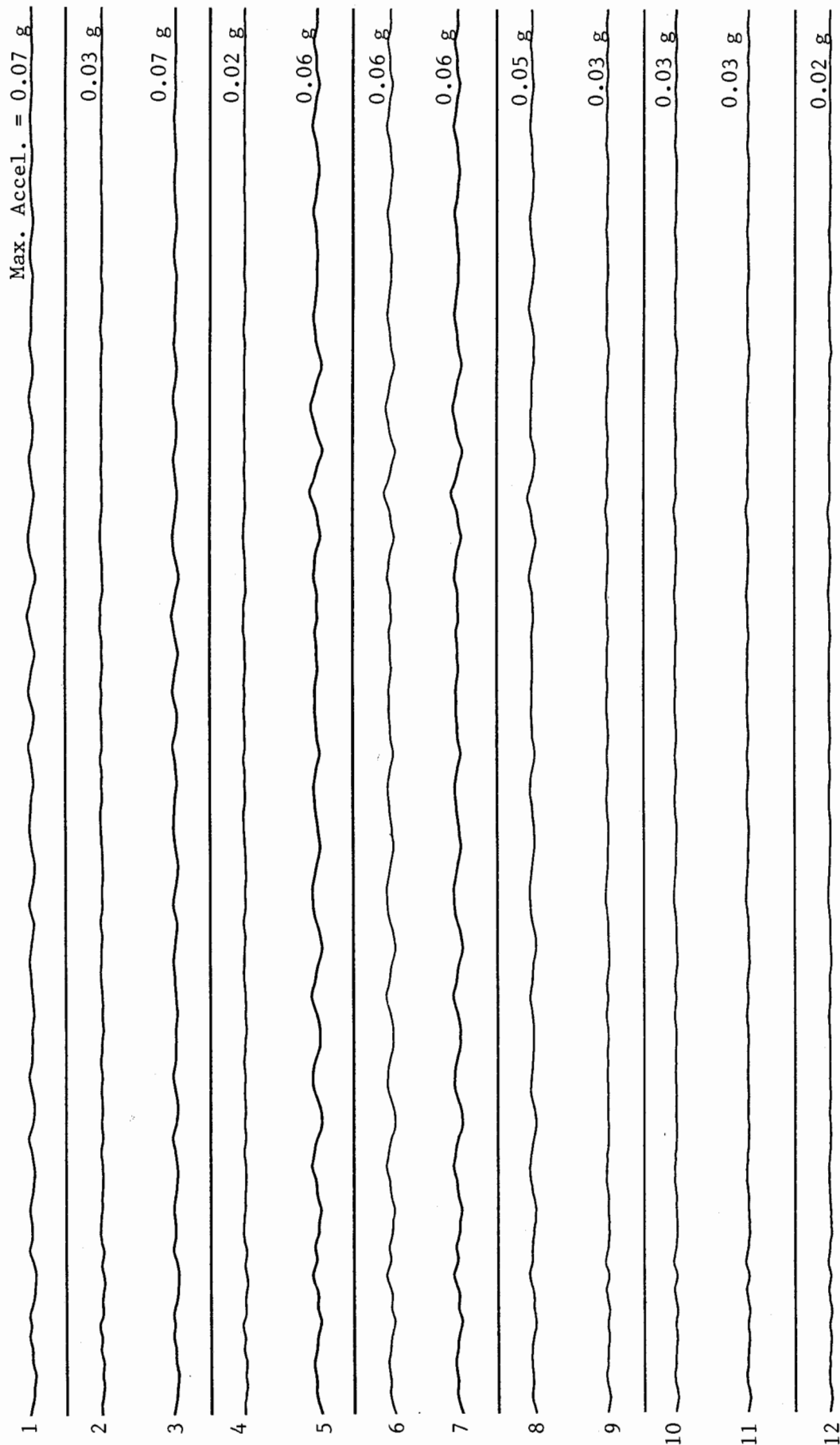
12 " North Wall - E

Structure Reference Orientation: N=0°

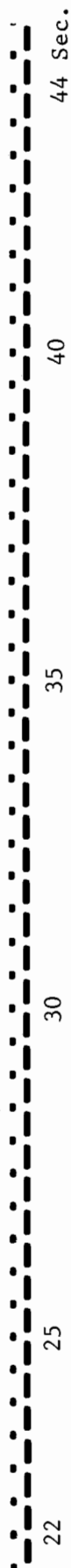
0 1 2 3 4 5 10 15 20 22 Sec.

Long Beach - 7-story Office Bldg.  
(CSMIP Station No. 14323)

Record 14323-Col154-9224.04



Bldg. reference FF instrument was not triggered.

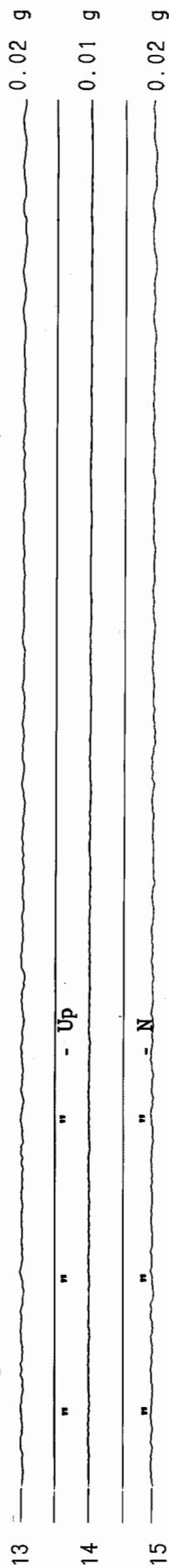


Long Beach - 7-story Office Bldg.  
(CSMIP Station 14323)

Record 14323-S2787-92224.04

Max.  
Accel.

S. Bldg, Ground Floor: Center - E



0 1 2 3 4 5 10 15 20 21 Sec.

13  
14  
15

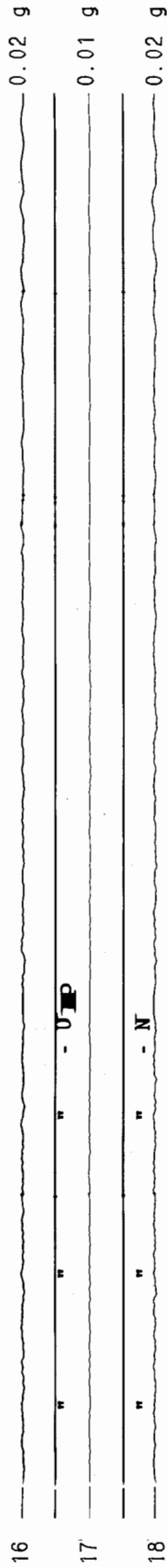
22 25 30 35 40 42 Sec.

Long Beach - 7-story Office Bldg.  
(CSMIP Station 14323)

Record 14323-S2788-92224.04

Max.  
Accel.

N. Bldg, Ground Floor: Center - E



0 1 2 3 4 5 10 15 20 21 Sec.

16

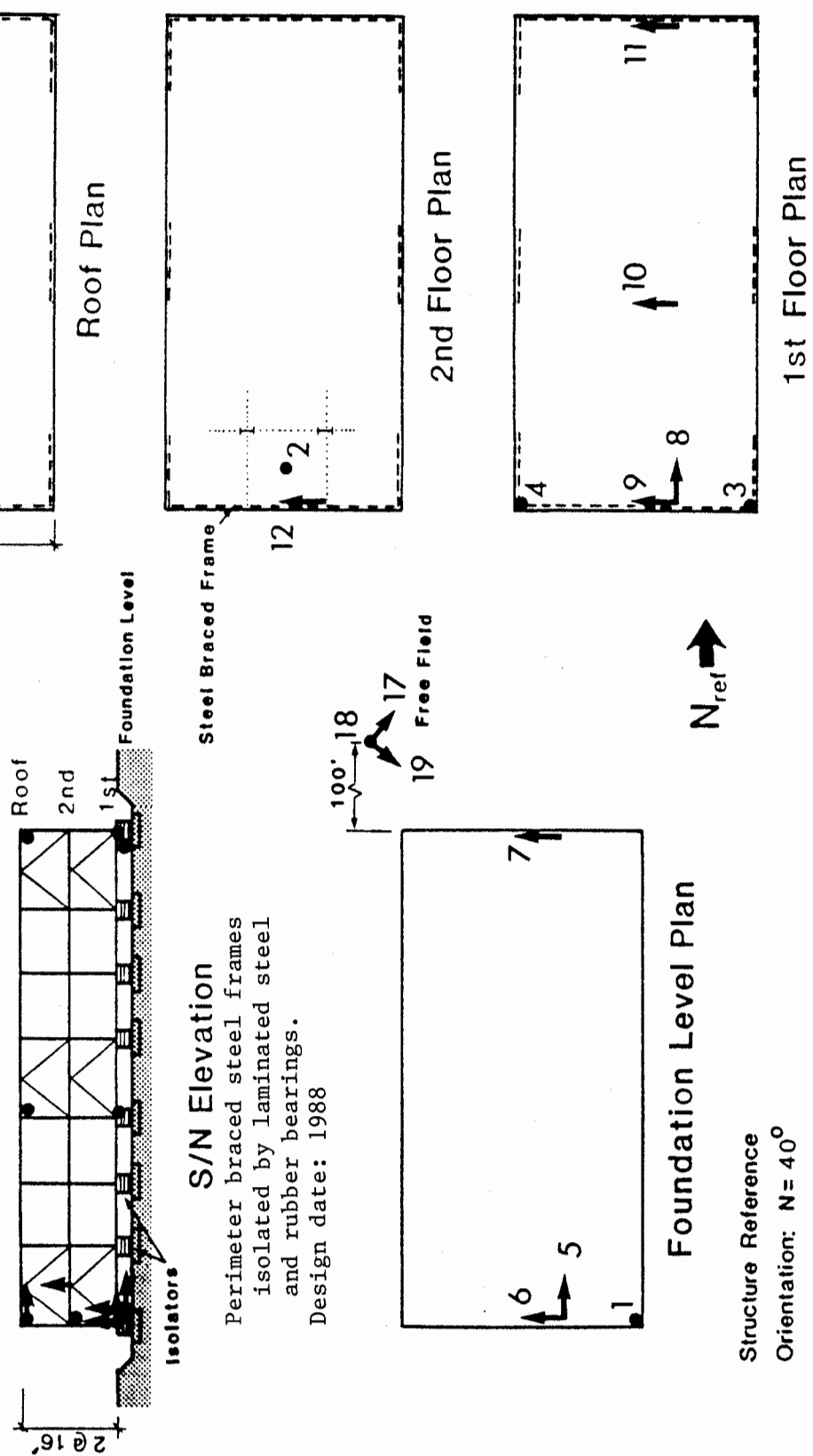
17

18

22 25 30 35 40 42 Sec.

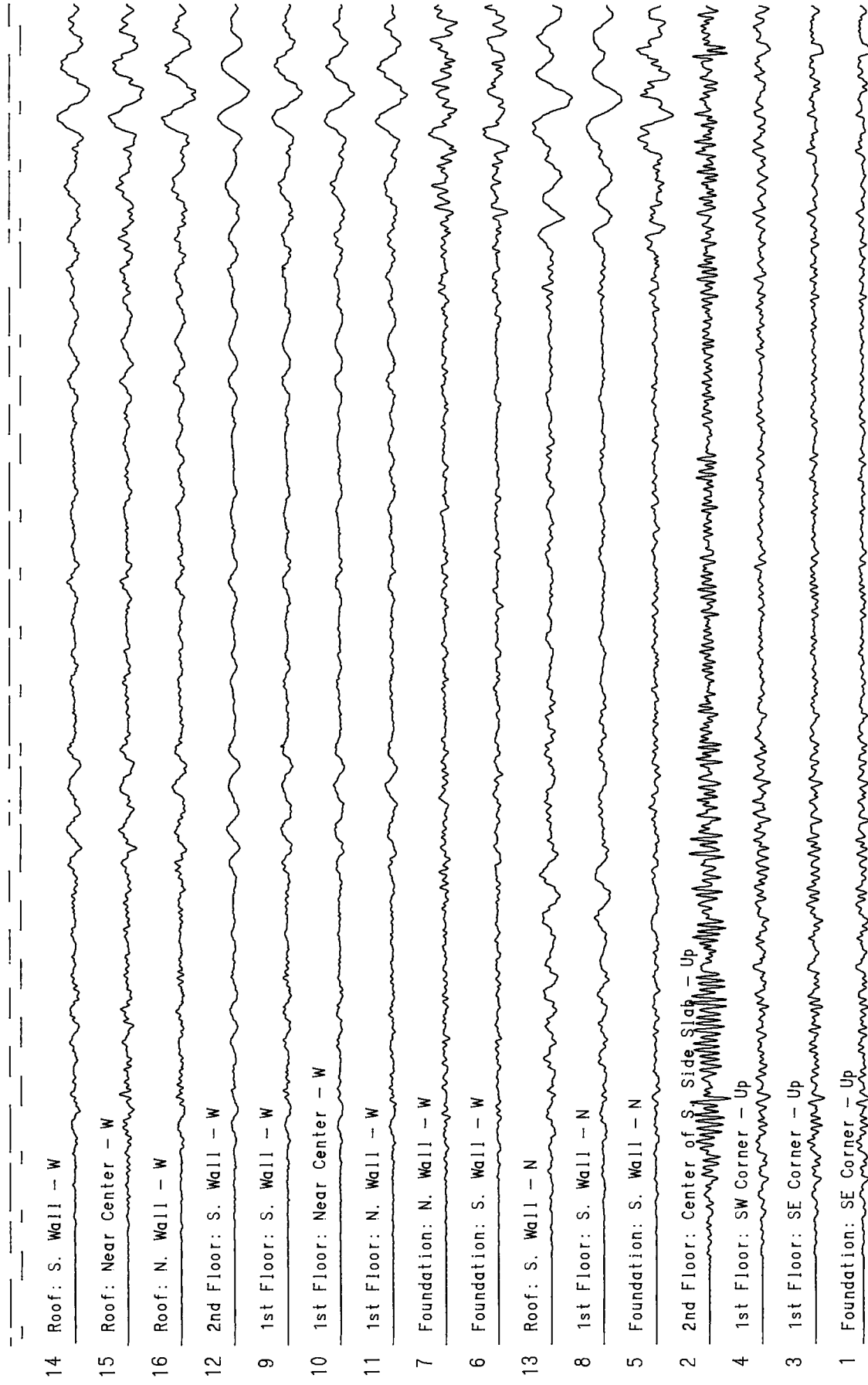
# Los Angeles - 2-story Fire Command Control Bldg. (CSMIP Station No. 24580)

## SENSOR LOCATIONS



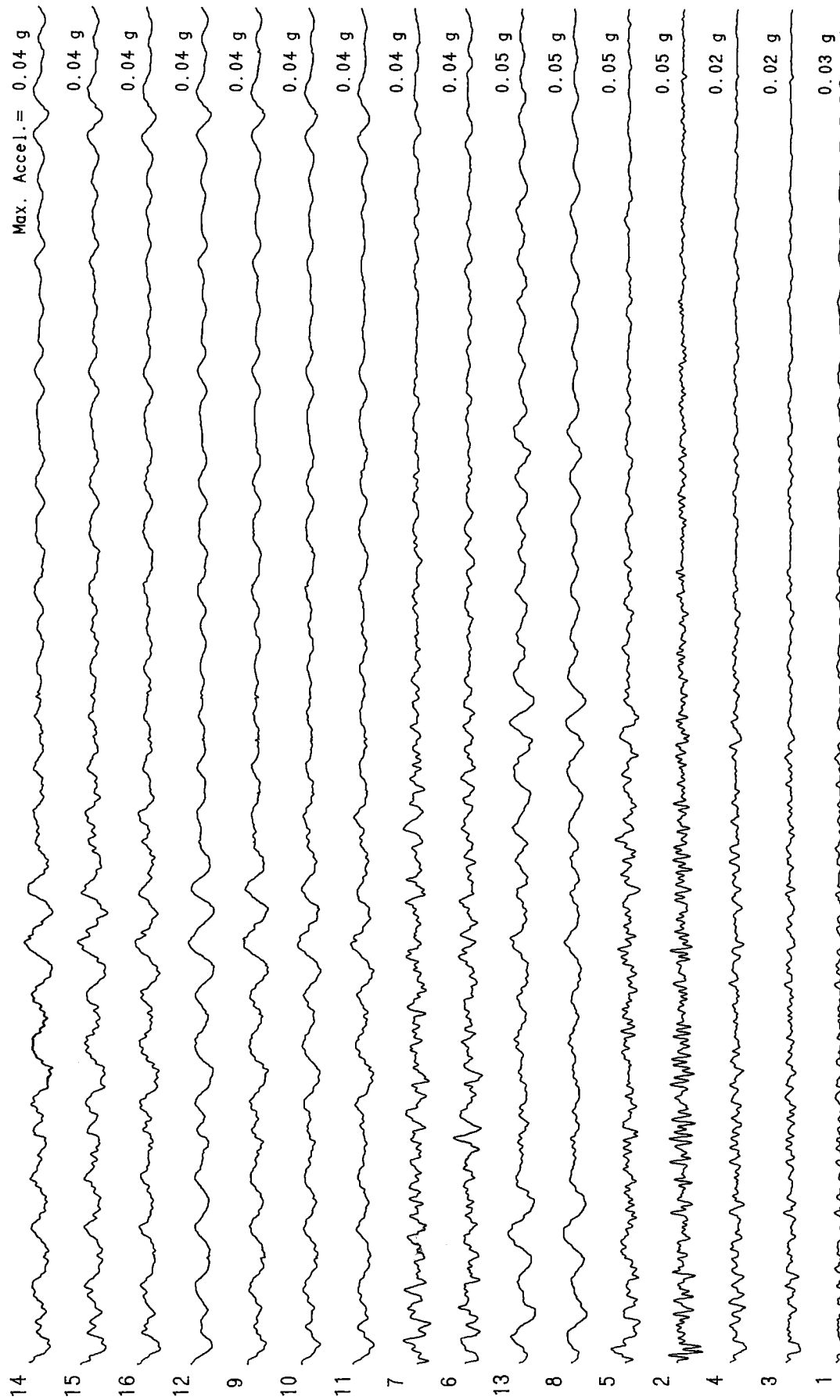
Los Angeles - 2-story Fire Command/Control Bldg.  
(CSMIP Station 24580)

RECORD 24580-CS104-92183.08



Los Angeles - 2-story Fire Command/Control Bldg.  
(CSMIP Station 24580)

RECORD 24580-CS104-92183.08



Bldg. reference FF record shown on page 45.

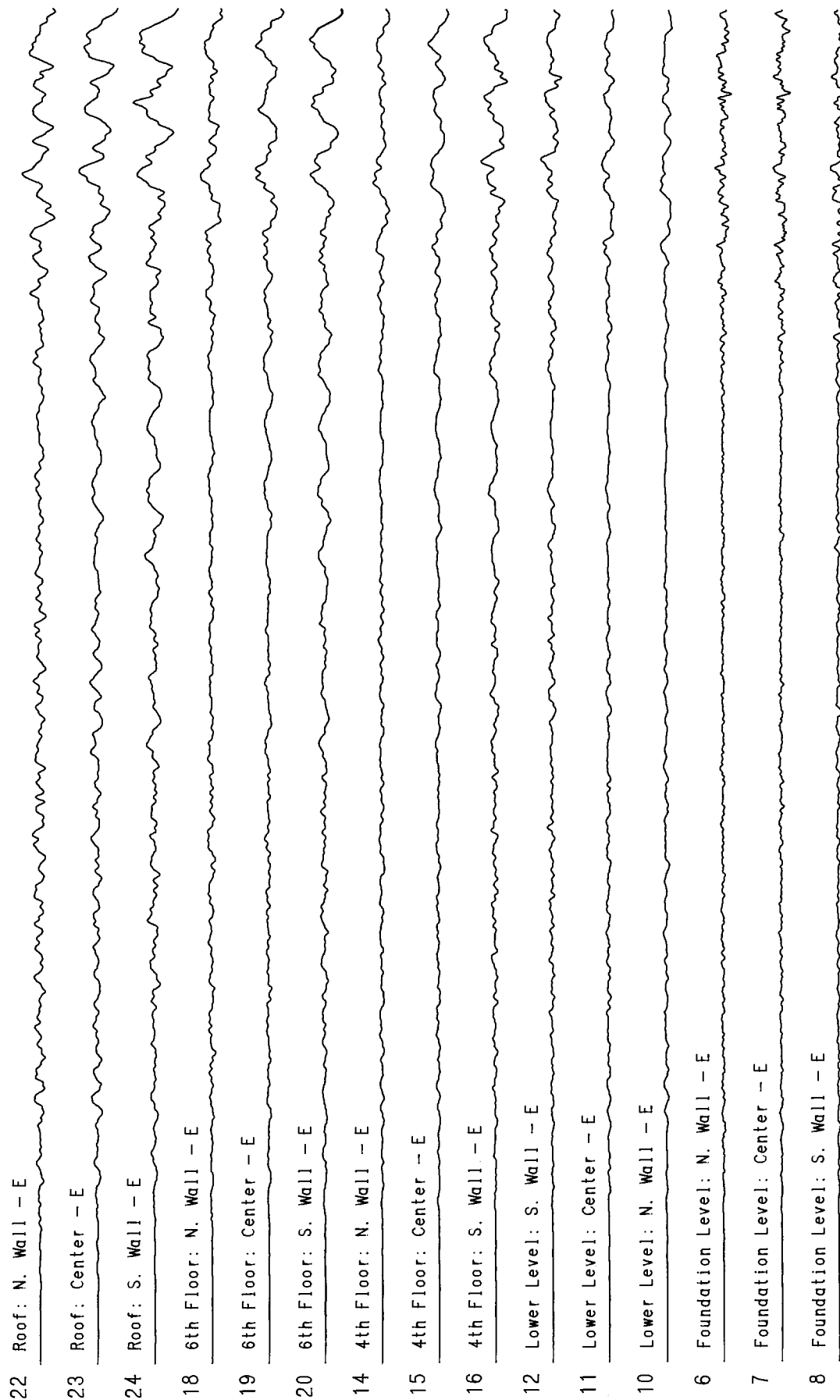
22 25 30 35 40 44 Sec.

This page plotted with 4.x vertical exaggeration.



Los Angeles - 7-story University Hospital  
(CSMIP Station 24605)

RECORD 24605-CS115-92184.06



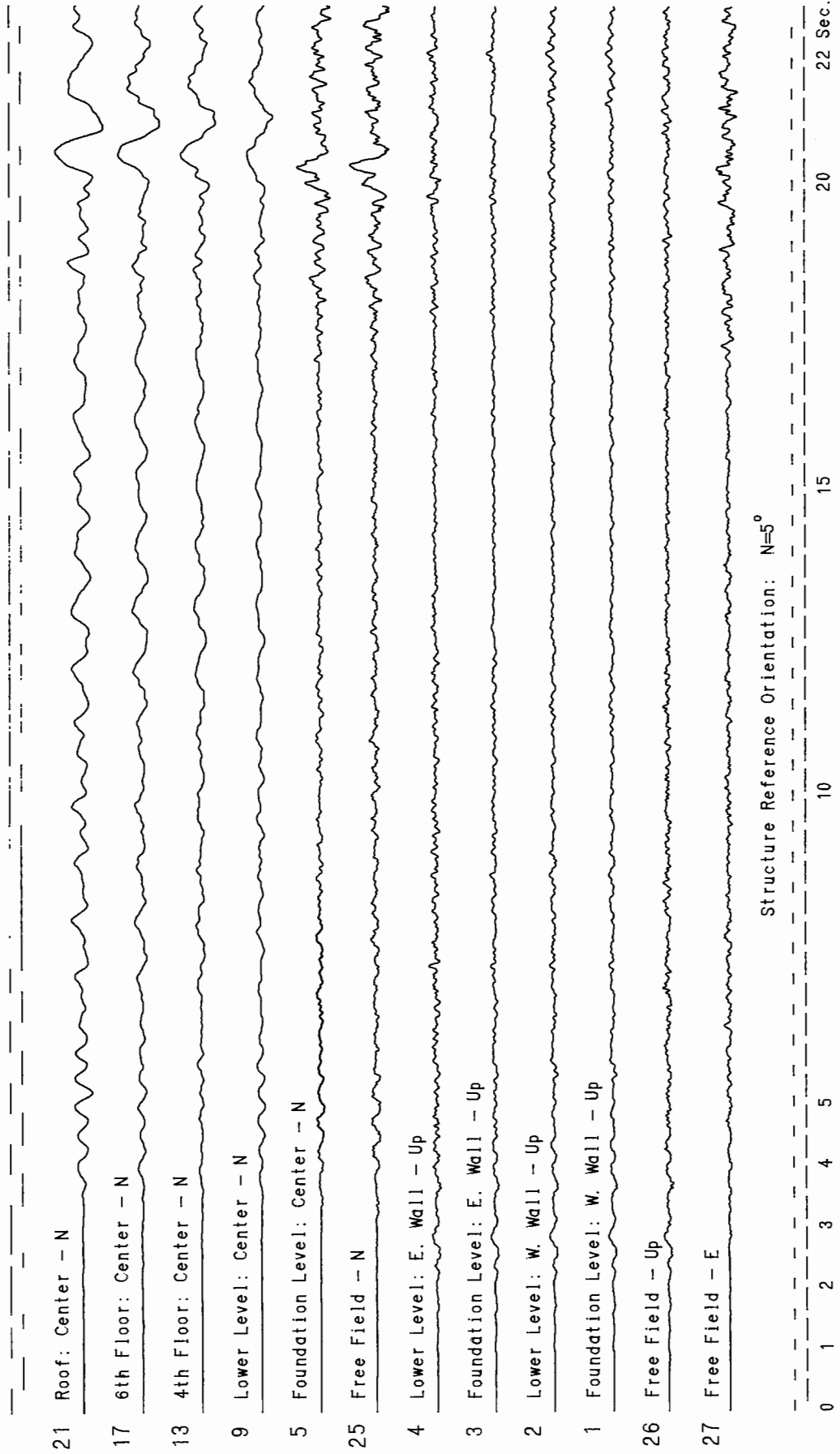
Structure Reference Orientation: N=5°

0 1 2 3 4 5 10 15 20 22 Sec.

This page plotted with 4.x vertical exaggeration.

Los Angeles - 7-story University Hospital  
(CSMIP Station 24605)

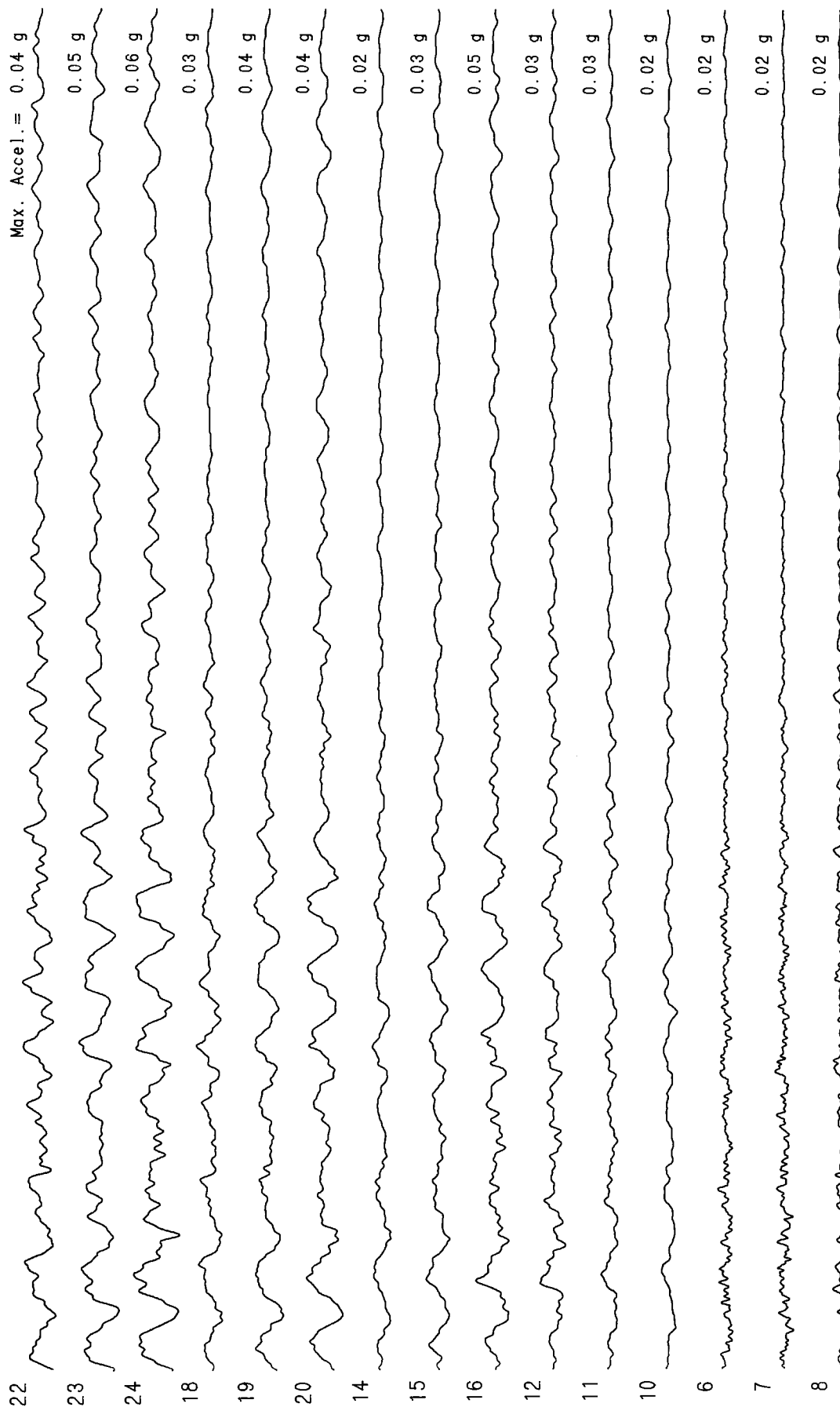
RECORD 24605-CS115-92184.06



This page plotted with 4.x vertical exaggeration.

Los Angeles - 7-story University Hospital  
(CSMIP Station 24605)

RECORD 24605-CS115-92184.06

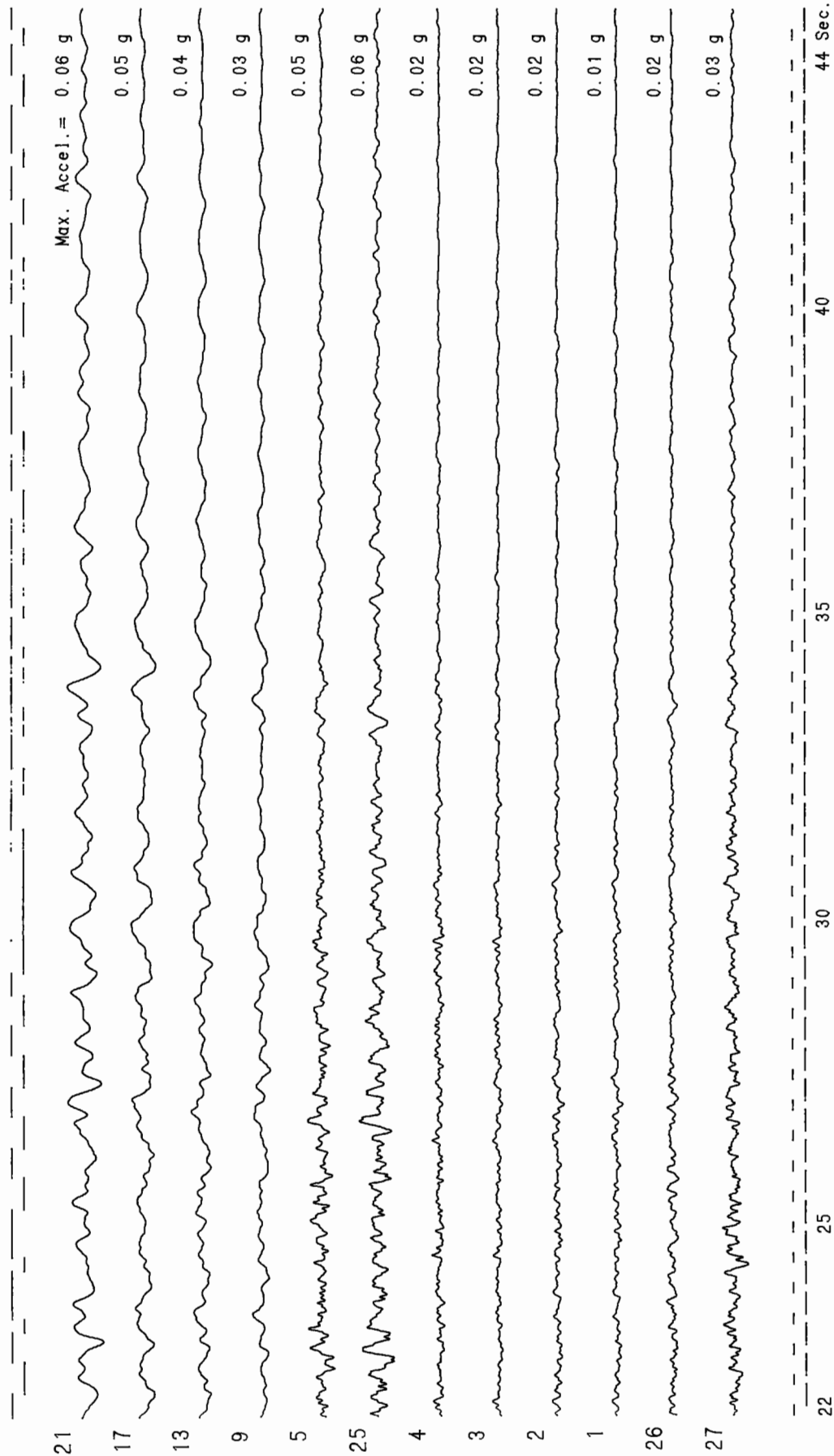


22 25 30 35 40 44 Sec.

This page plotted with 4.x vertical exaggeration.

Los Angeles - 7-story University Hospital  
(CSMIP Station 24605)

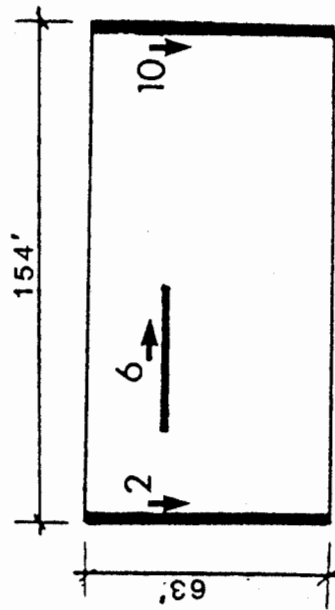
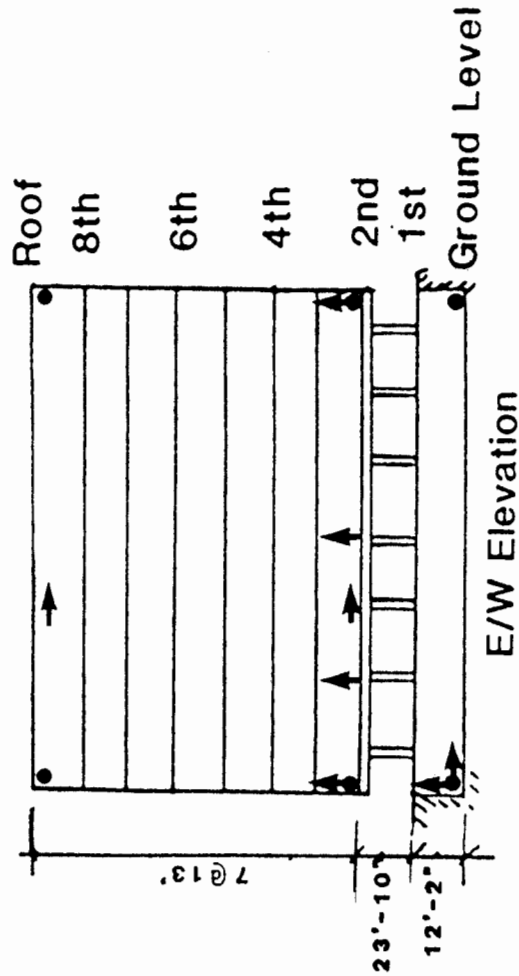
RECORD 24605-CS115-92184.06



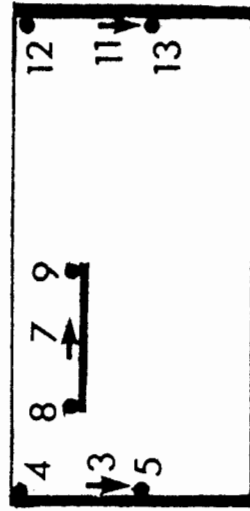
This page plotted with 4.x vertical exaggeration.

Los Angeles - 8-story CSULA Admin. Bldg.  
(CSMIP Station No. 24468)

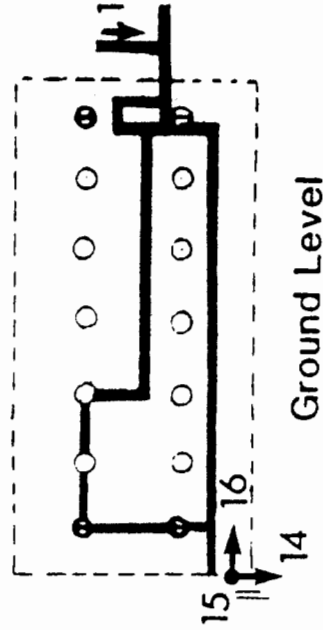
SENSOR LAYOUT



Structure Reference  
Orientation:  $N = 0^\circ$



Composite steel/concrete columns  
in the first story and concrete  
shear walls in 2nd-8th stories.  
Design date: 1967



Structure Reference  
Orientation:  $N = 0^\circ$

Los Angeles - 8-story CSULA Admin. Bldg.  
(CSMIP Station 24468)

Record 24468-C0222-92190.03

		Max. Accel. = 0.02 g
1	Ground Floor: E. End - S	
2	Roof: W. Wall - S	0.06 g
3	2nd Floor: W. Wall - S	0.04 g
4	" N. End of W. Wall - Up	0.04 g
5	" Center of W. Wall - Up	0.03 g
6	Roof: Central Wall - E	0.03 g
7	2nd Floor: Central Wall - E	0.02 g
8	" W. End of Central Wall - Up	0.01 g
9	" E. End of Central Wall - Up	0.02 g
10	Roof: E. Wall - S	0.04 g
11	2nd Floor: E. Wall - S	0.03 g
12	" N. End of E. Wall - Up	0.02 g
13	" Center of E. Wall - Up	0.02 g

Structure Reference Orientation: N=0°

0 1 2 3 4 5 10 15 20 22 Sec.

Los Angeles - 8-story CSULA Admin. Bldg.  
(CSMIP Station 24468)

Record 24468-S1602-92190.03

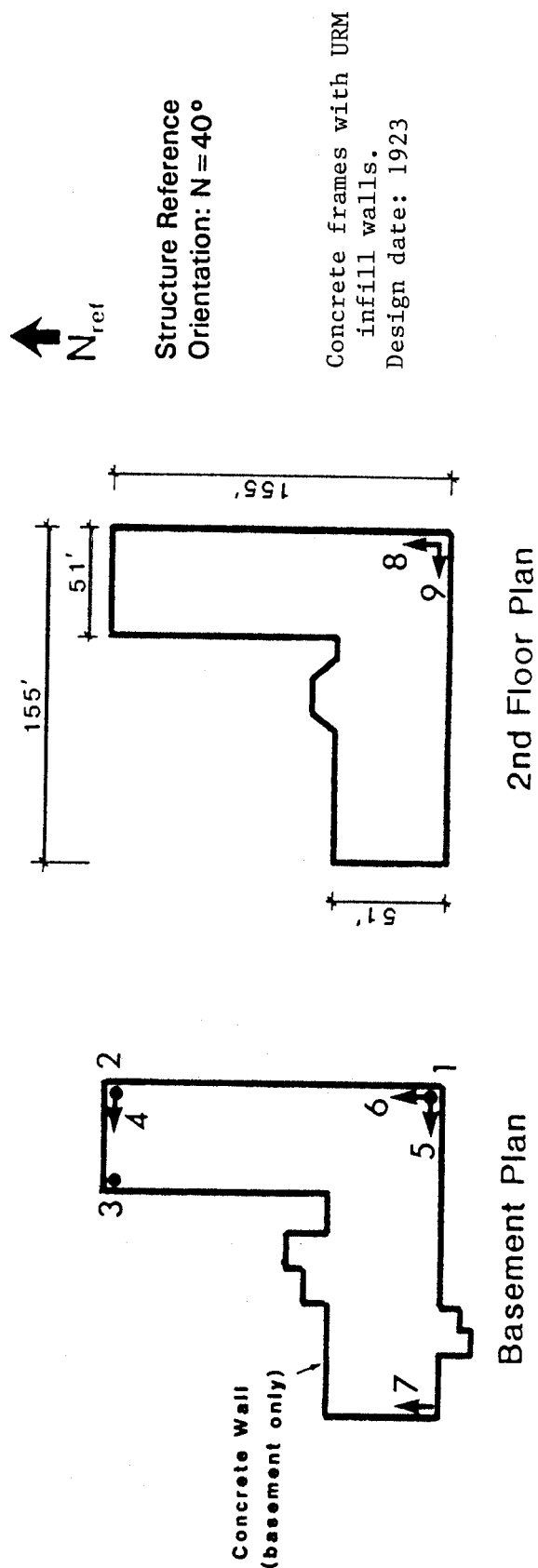
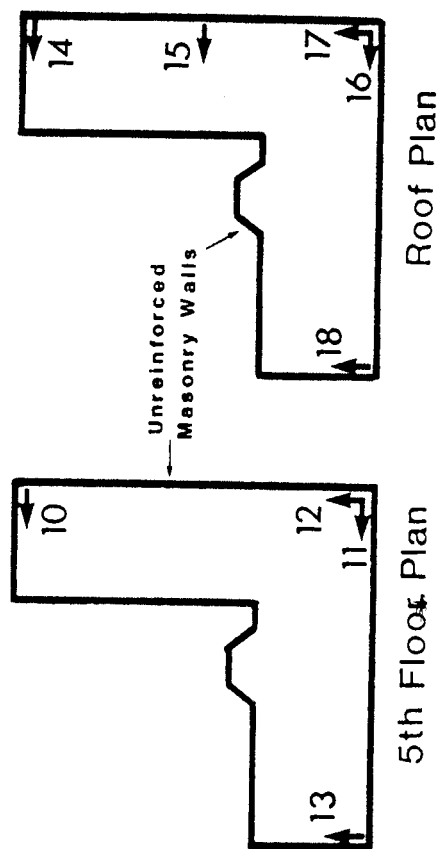
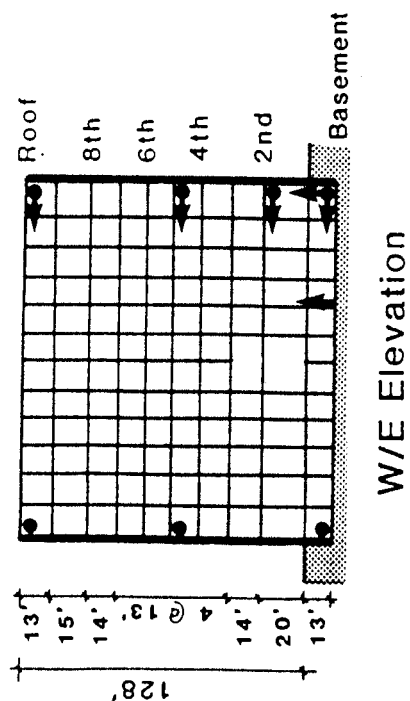
		Max. Accel. = 0.03 g
14	Ground Floor: SW Corner - S	
15	" " - Up	0.02 g
16	" " - E	0.02 g

Structure Reference Orientation: N=0°

0	1	2	3	4	5	10	15	20	22 Sec.
---	---	---	---	---	---	----	----	----	---------

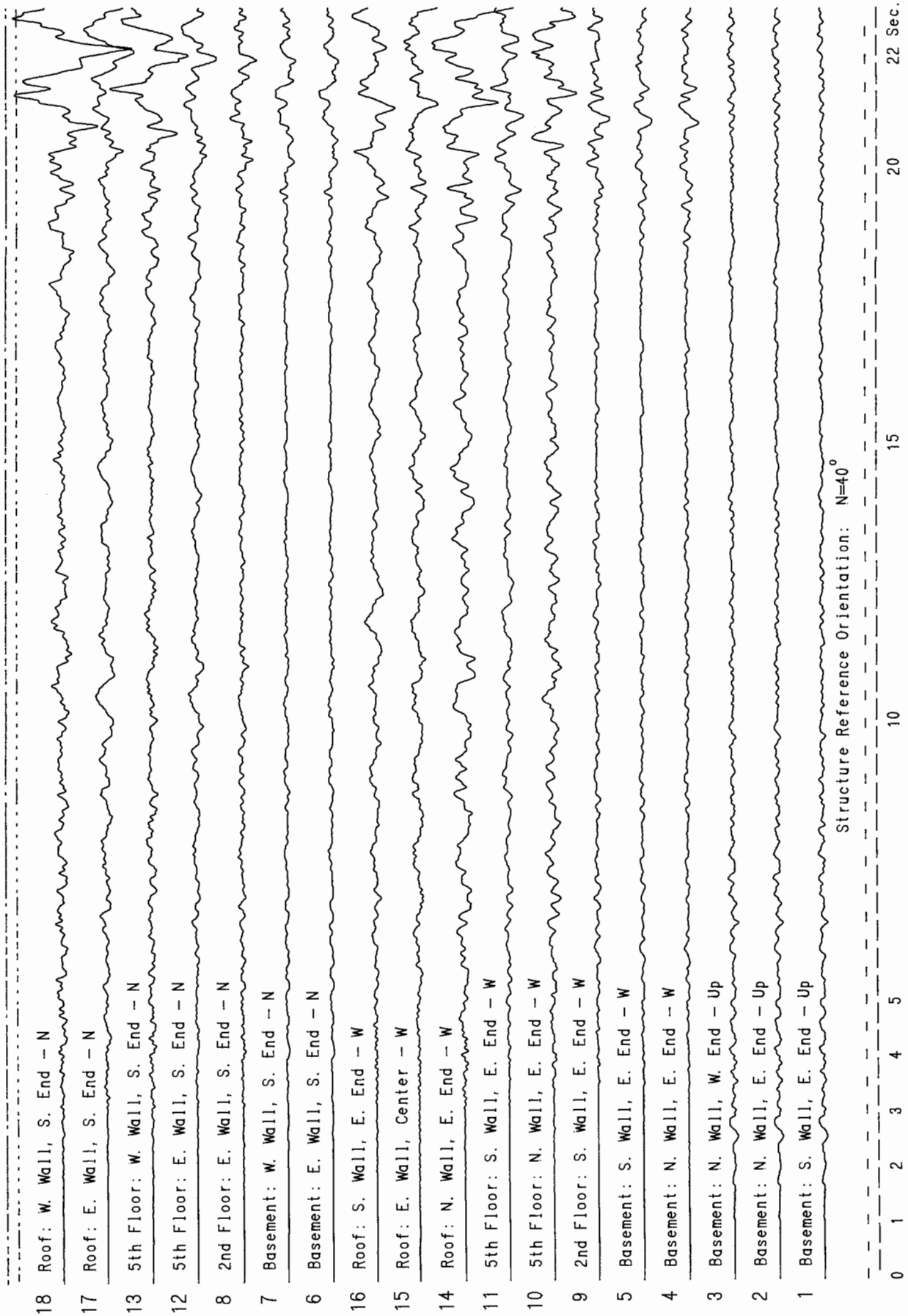
**Los Angeles - 9-story Office Bldg.**  
(CSMIP Station No. 24579)

# SENSOR LOCATION



Los Angeles - 9-story Office Bldg.  
(CSMIP Station 24579)

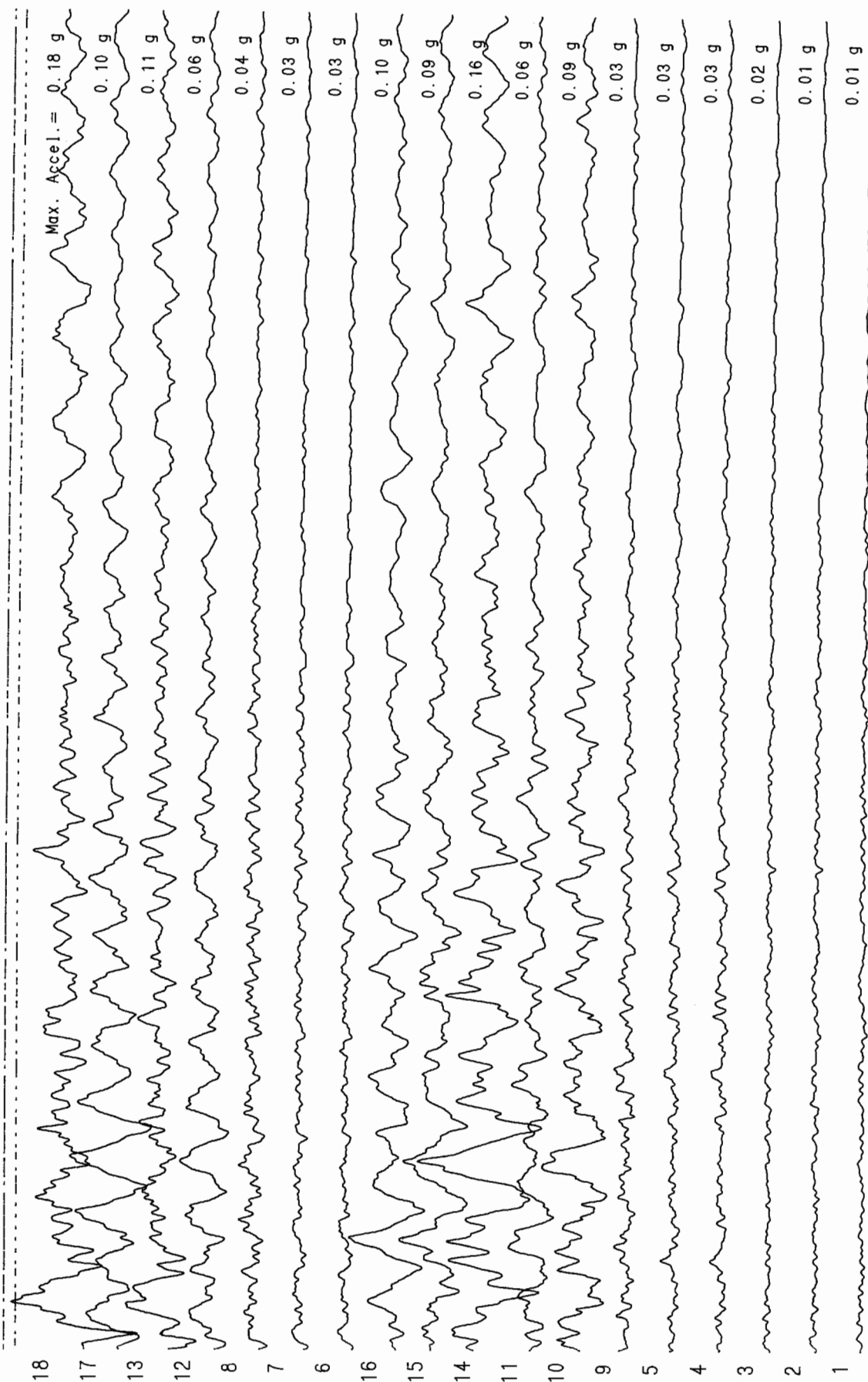
RECORD 24579-CS103-92190.10



This page plotted with 4.x vertical exaggeration.

Los Angeles - 9-story Office Bldg.  
(CSMIP Station 24579)

RECORD 24579-CS103-92190.10

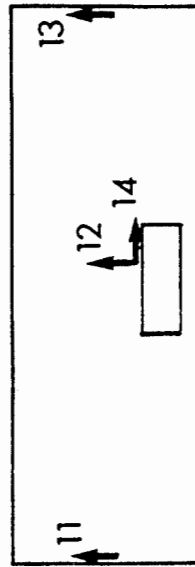
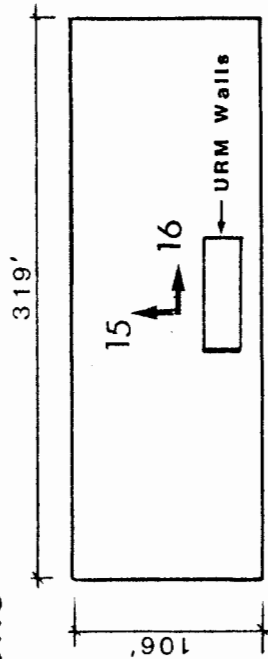
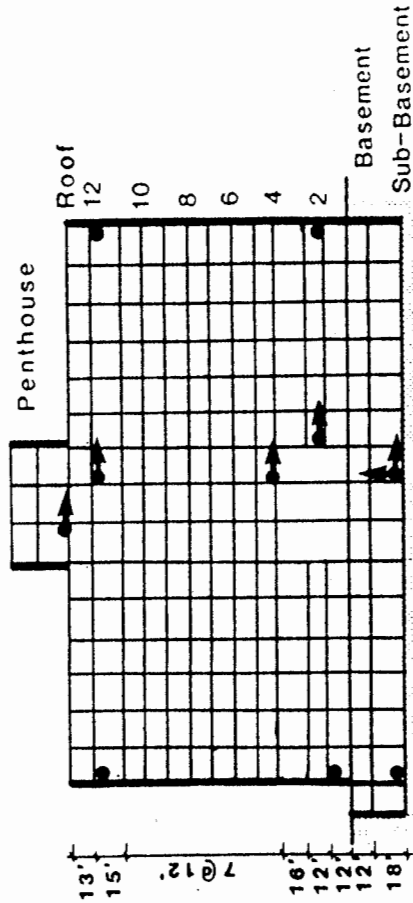


22 25 30 35 40 44 Sec.

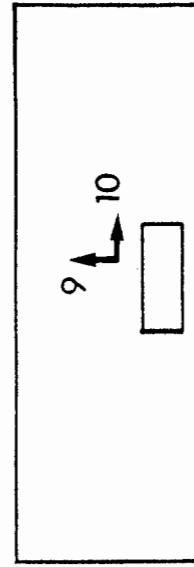
This page plotted with 4.x vertical exaggeration.

Los Angeles - 12-story Commercial/Office Bldg.  
(CSMIP Station No. 24581)

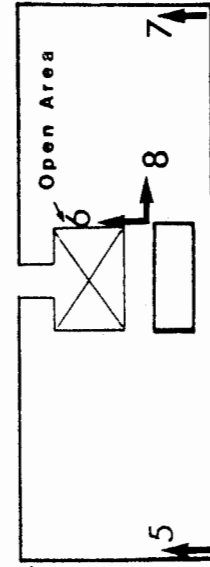
SENSOR LOCATIONS



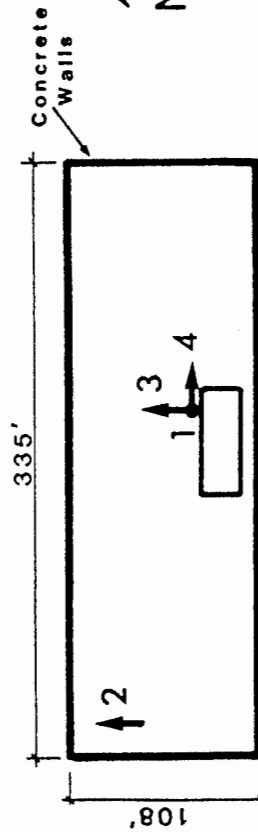
12th Floor Plan



4th Floor Plan



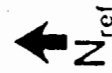
2nd Floor Plan (Mezzanine)



Sub-Basement Plan

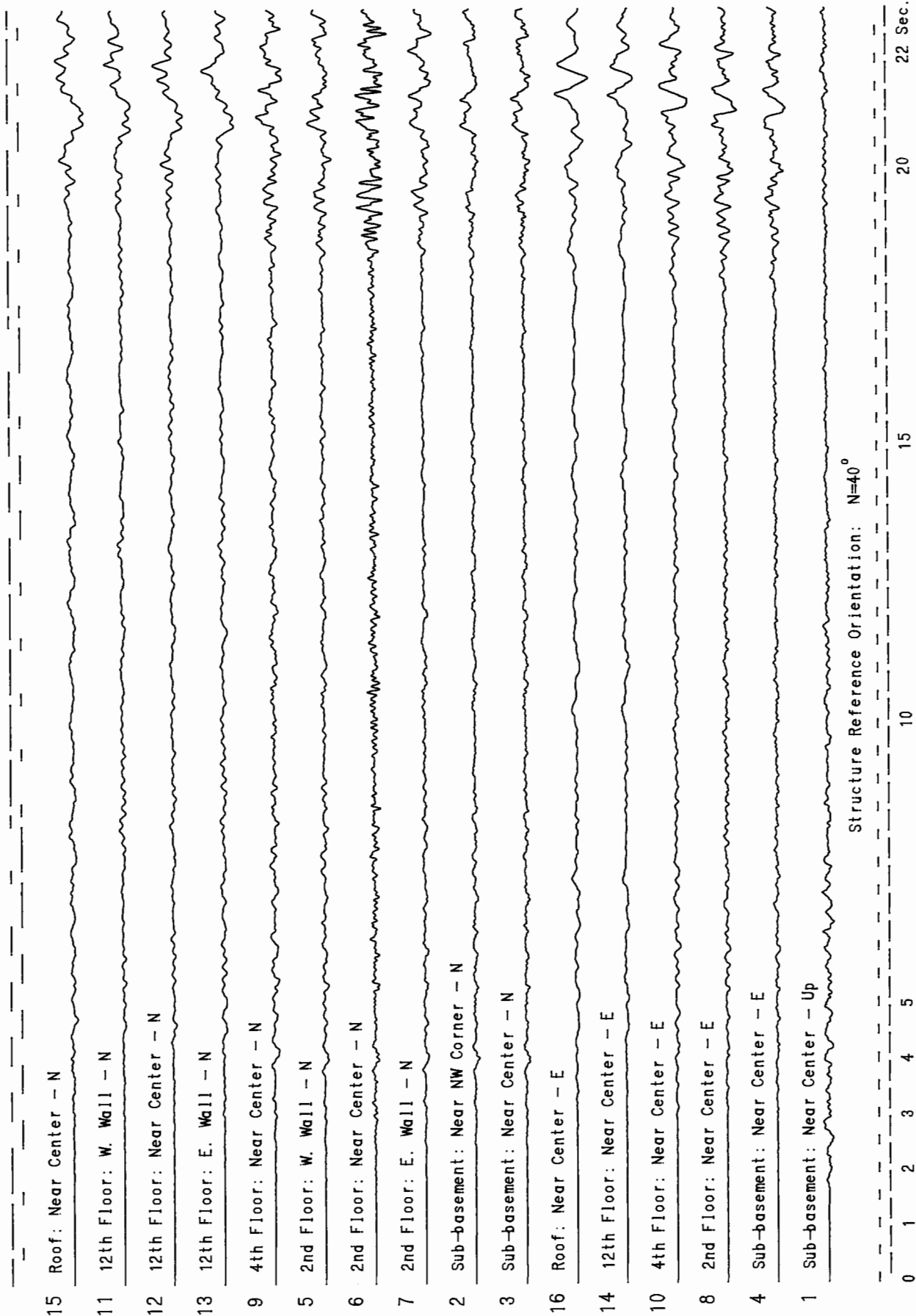
Composite steel/concrete frames  
with URM infill walls.  
Design date: 1925

Structure Reference  
Orientation: N = 40°



Los Angeles - 12-story Commercial/Office Bldg  
(CSMIP Station 24581)

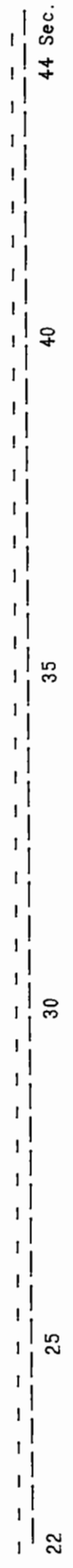
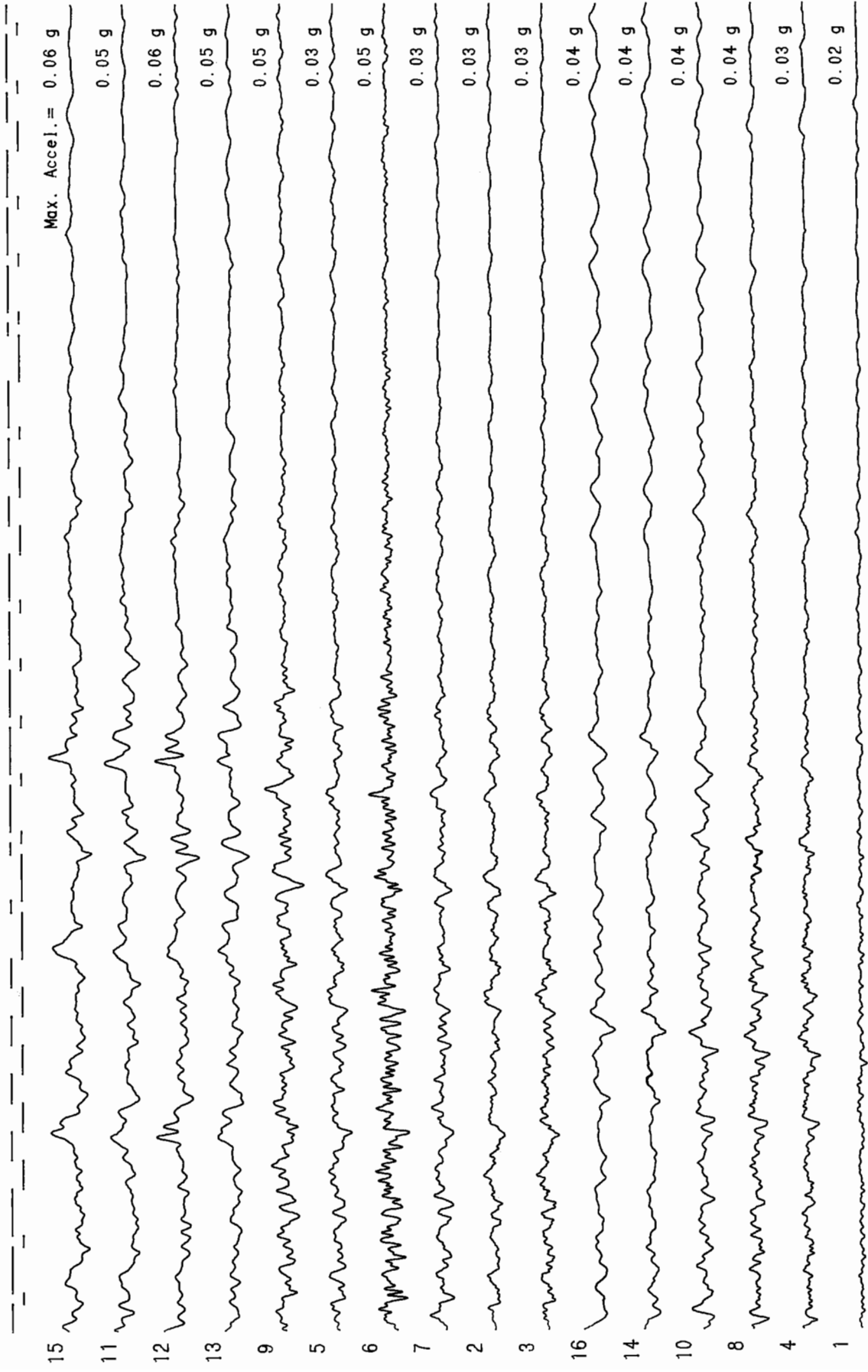
RECORD 24581-CS105-92190.06



This page plotted with 4.x vertical exaggeration.

Los Angeles - 12-story Commercial/Office Bldg  
(CSMIP Station 24581)

RECORD 24581-CS105-92190.06

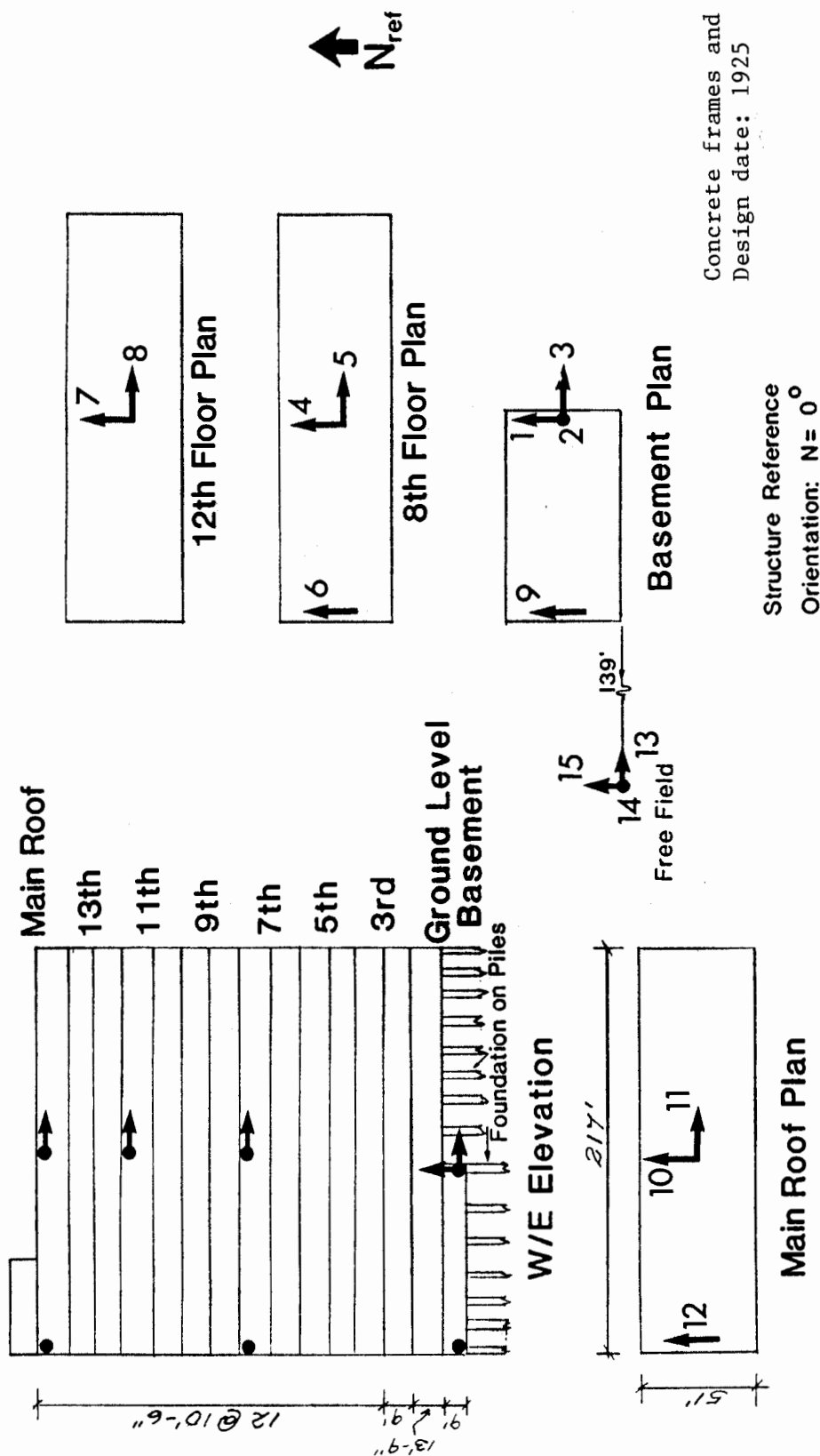


This page plotted with 4.x vertical exaggeration.

# Los Angeles - Hollywood Storage Bldg.

(CSMIP Station No. 24236)

## SENSOR LAYOUT



Los Angeles - Hollywood Storage Bldg.  
(CSMIP Station 24236)

Record 24236-C0124-92191.03

1 Basement: Bldg. Center - N

2 " " - Up

3 " " - E

4 8th Floor: Center - N

5 " " - E

6 " West Wall - N

7 12th Floor: Center - N

8 " " - E

9 Basement: West Wall - N

10 Roof: Center - N

11 " " - E

12 " West Wall - N

Structure Reference Orientation: N=0°

0 1 2 3 4 5 10 15 20 22 Sec.

Los Angeles - Hollywood Storage Bldg.  
(CSMIP Station 24236)

Record 24236-C0124-92191.03

Max. Accel. = 0.03 g

1

2

0.02 g

3

0.03 g

4

0.06 g

5

0.05 g

6

0.03 g

7

0.05 g

8

0.07 g

9

0.03 g

10

0.09 g

11

0.08 g

12

0.04 g

Bldg. reference FF record shown on page 44.

22

25

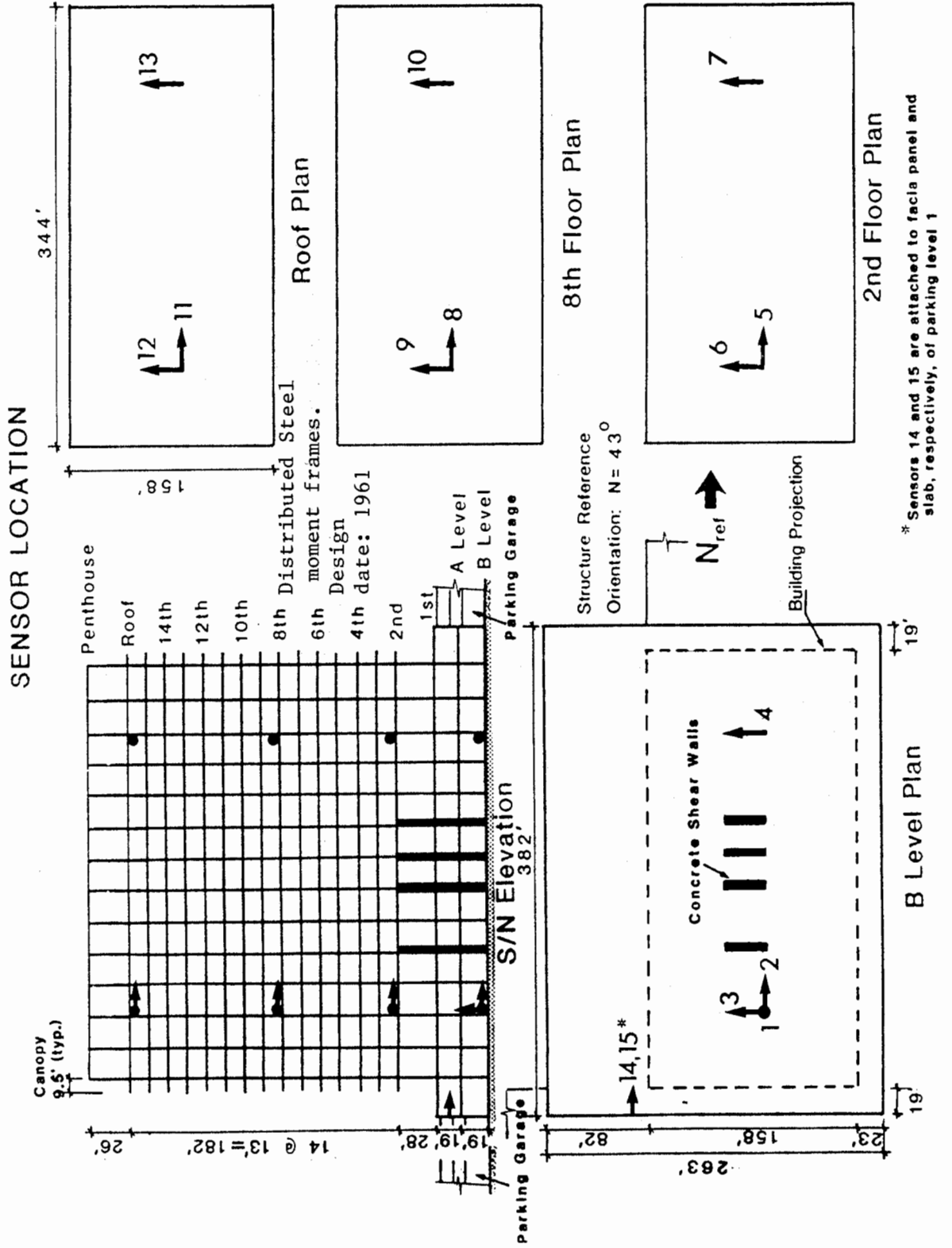
30

35

40

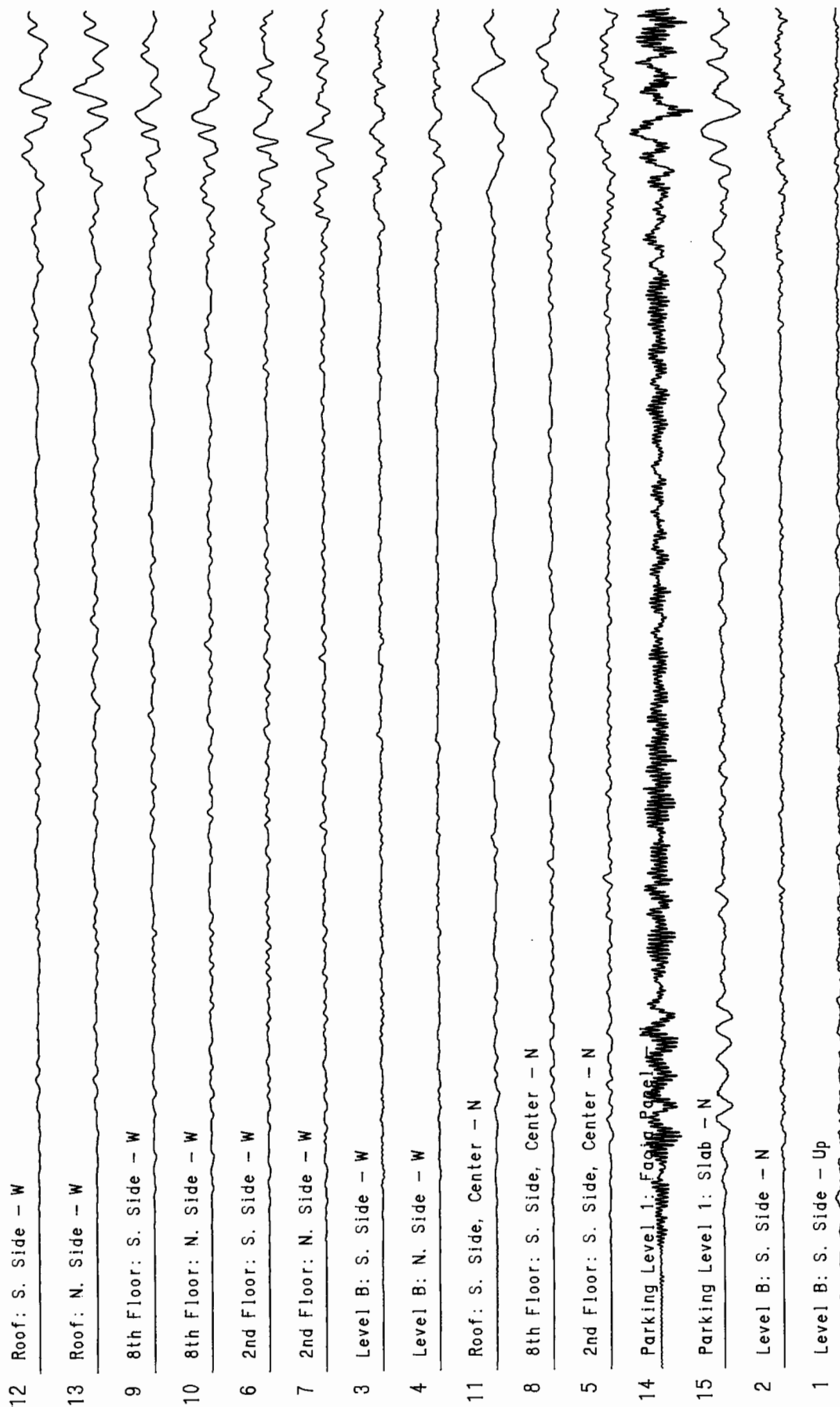
44 Sec.

# Los Angeles - 15-story Govt. Office Bldg. (CSMIP Station No. 24569)



Los Angeles - 15-story Government Office Bldg  
(CSMIP Station 24569)

RECORD 24569-CS102-92189.05



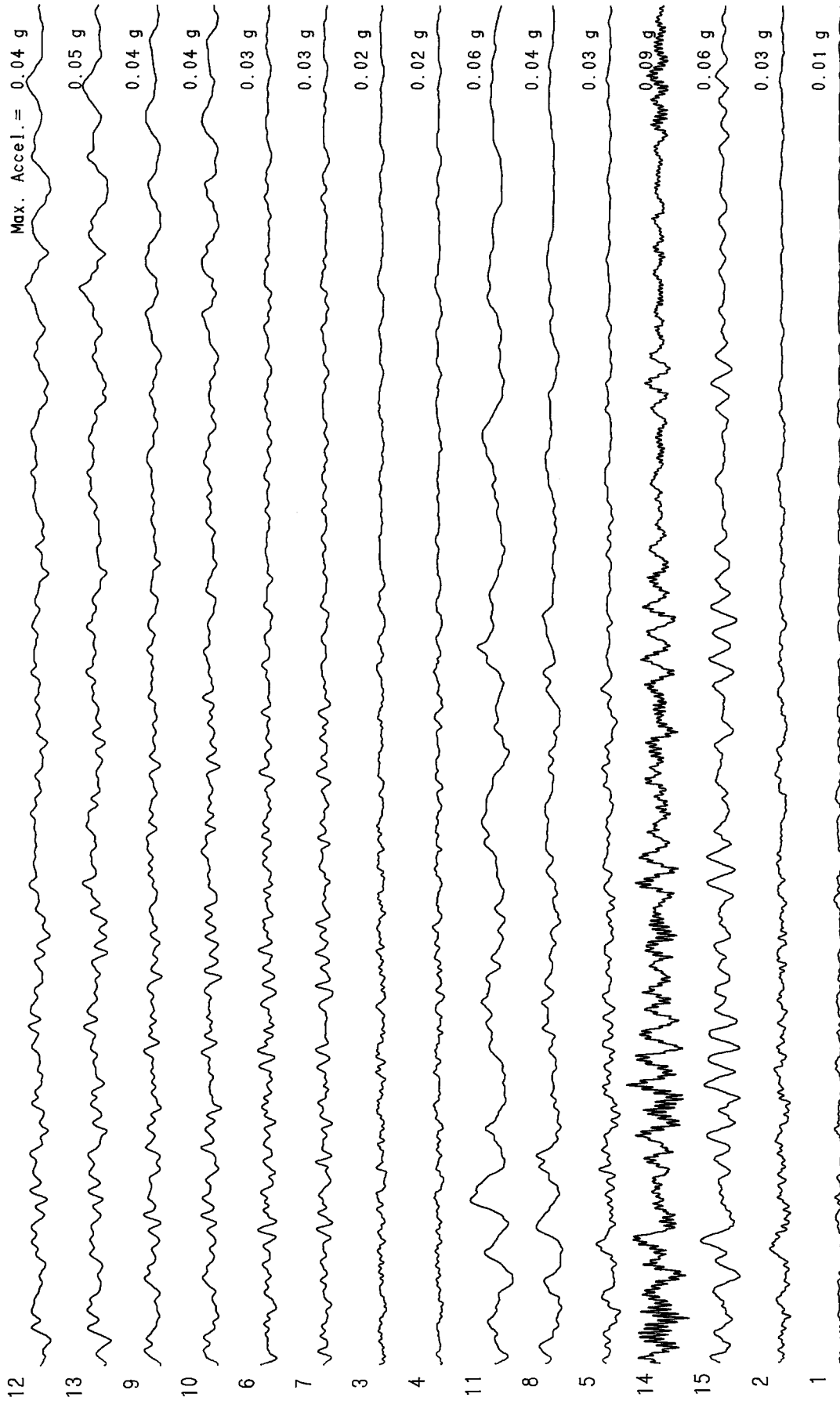
Structure Reference Orientation: N=43°

0 1 2 3 4 5 10 15 20 22 Sec.

This page plotted with 4.x vertical exaggeration.

Los Angeles - 15-story Government Office Bldg  
(CSMIP Station 24569)

RECORD 24569-CS102-92189.05

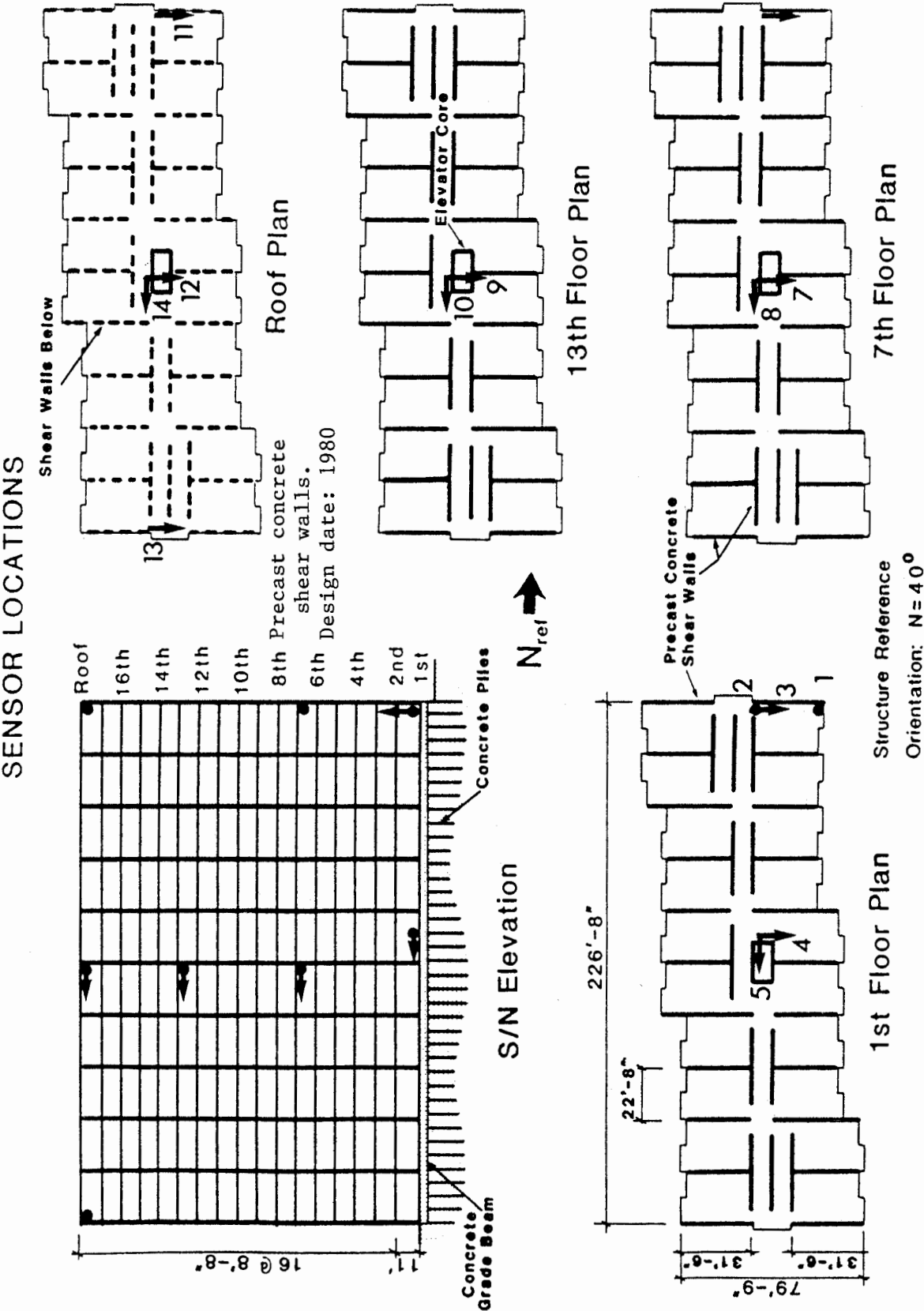


Bldg. reference FF record shown on page 47.

22 25 30 35 40 44 Sec.

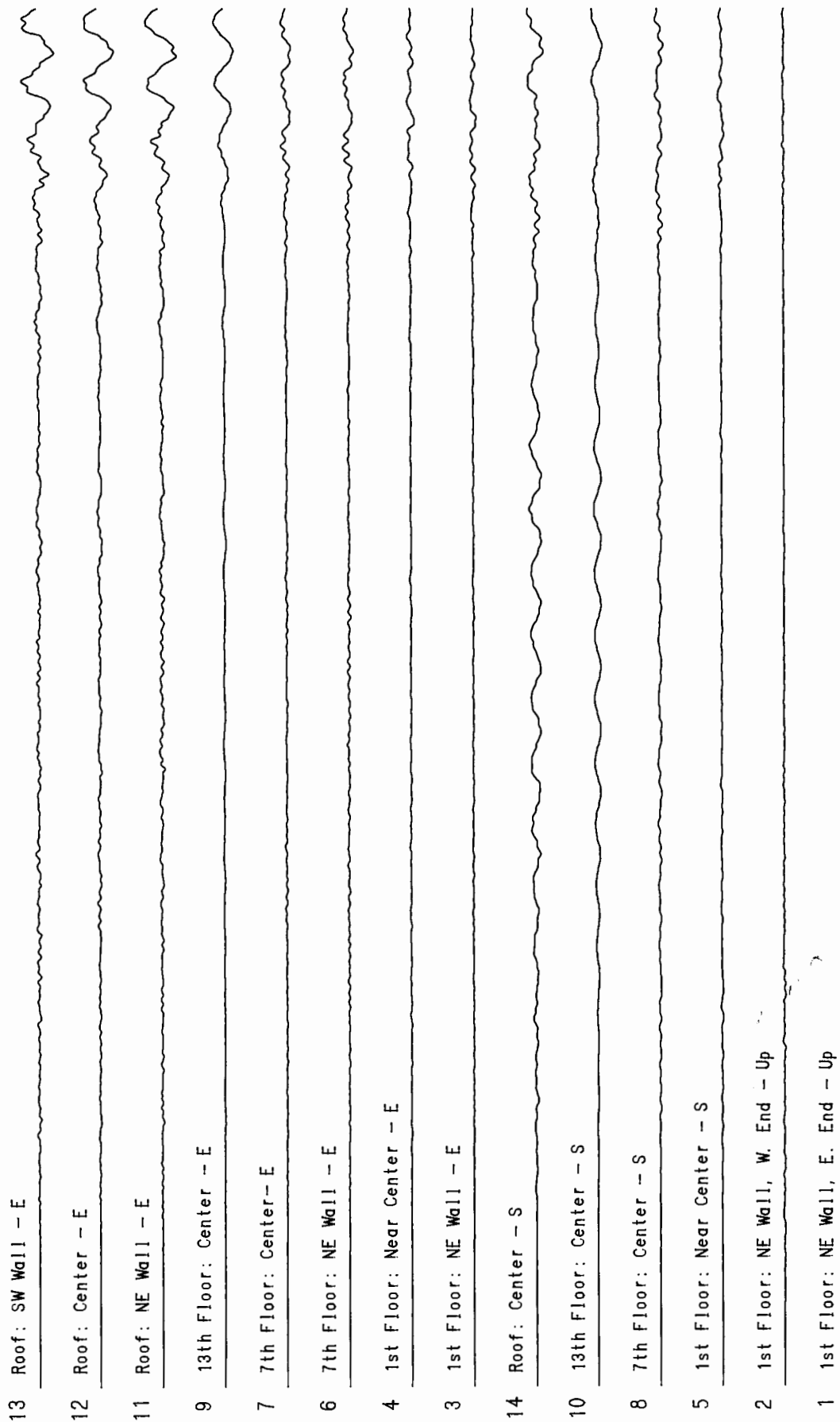
This page plotted with 4.0x vertical exaggeration.

Los Angeles - 17-story Residential Bldg.  
(CSMIP Station No. 24601)

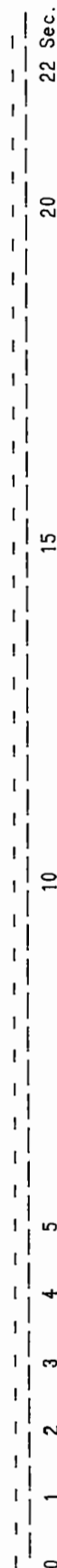


# Los Angeles - 17-story Residential Bldg. (CSMIP Station 24601)

RECORD 24601-CS111-92190.13

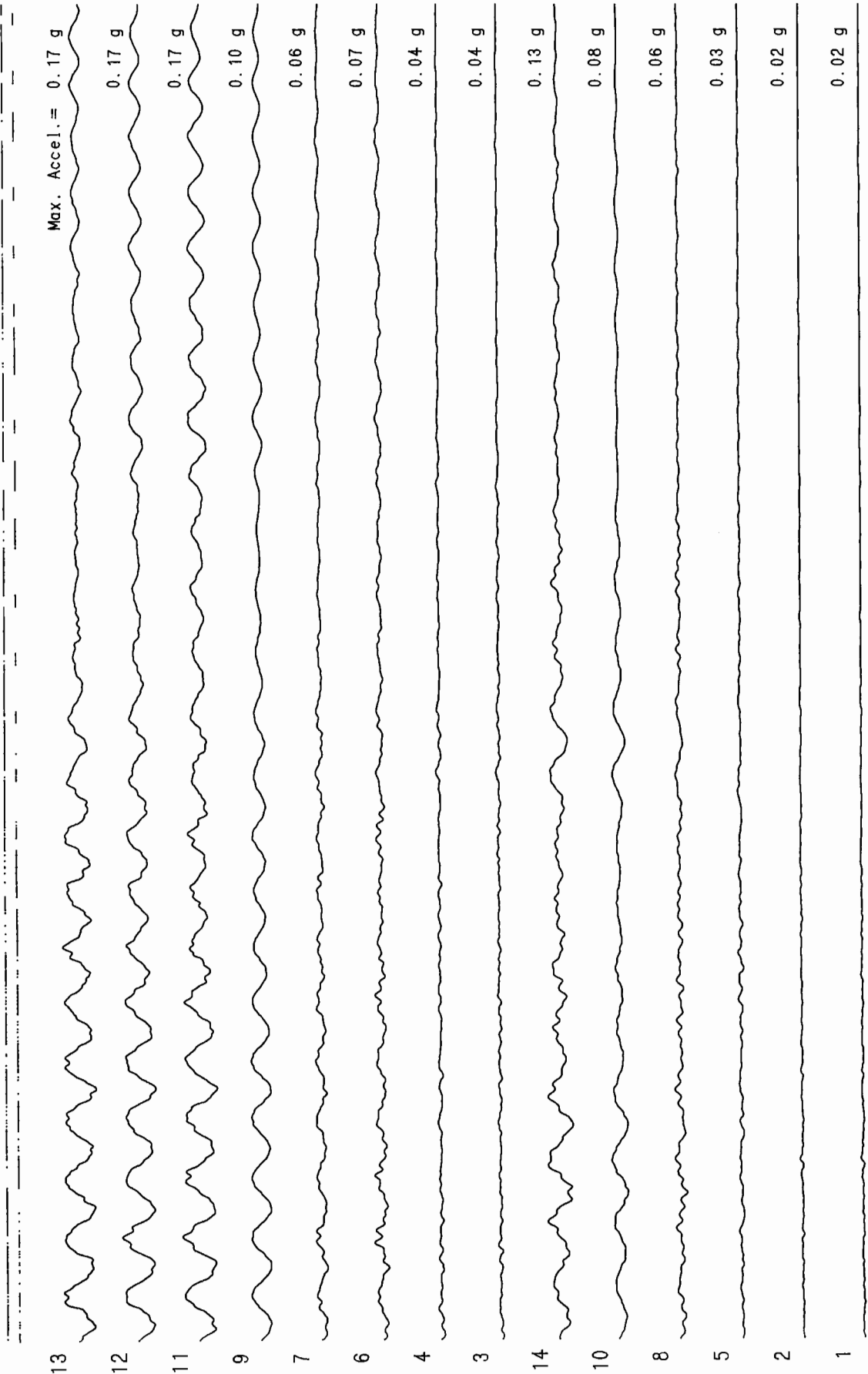


Structure Reference Orientation: N=40°

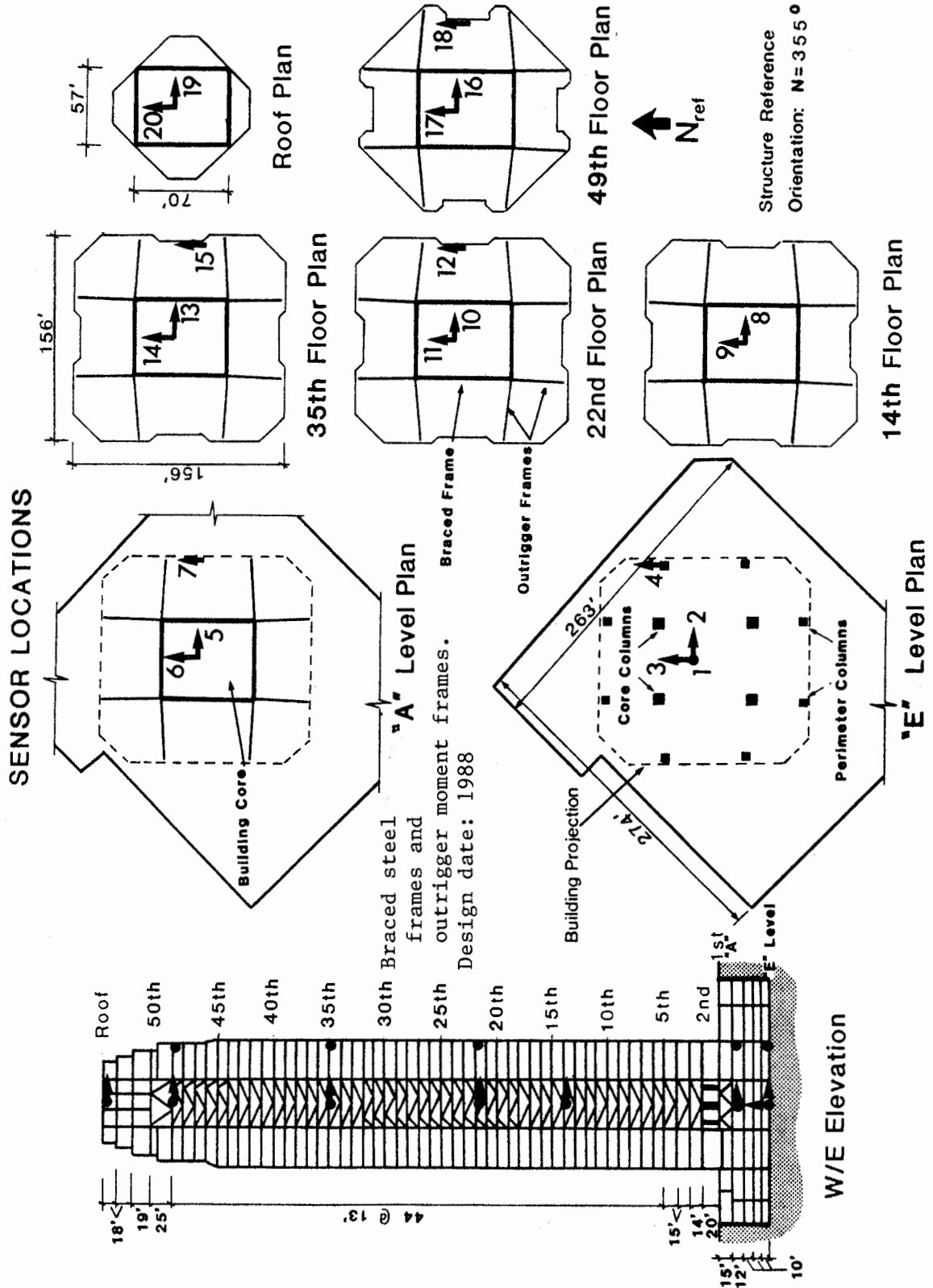


Los Angeles - 17-story Residential Bldg.  
(CSMIP Station 24601)

RECORD 24601-CS111-92190.13

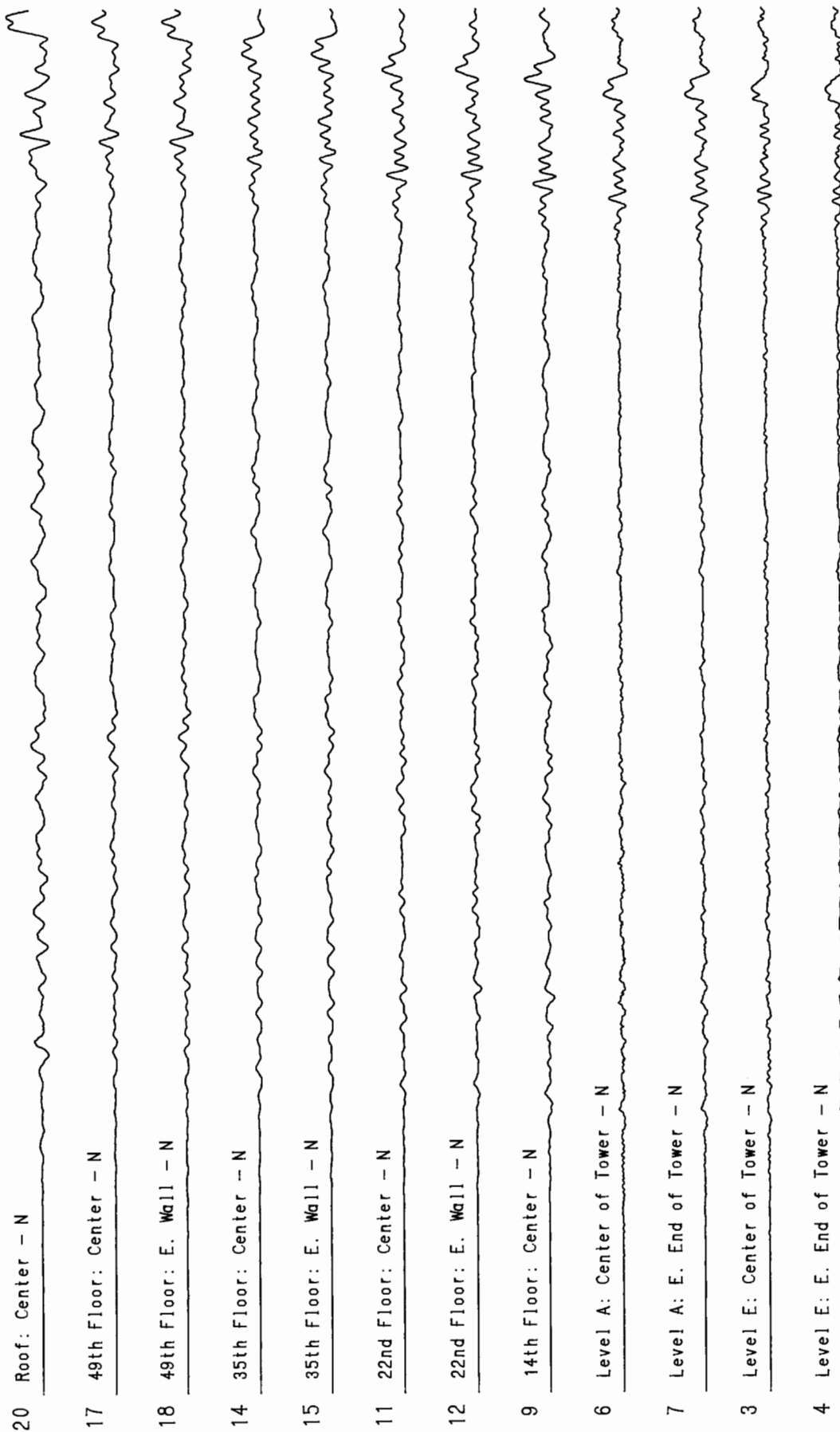


# Los Angeles - 52-story Office Bldg. (CSMIP Station No. 24602)



Los Angeles - 52-story Office Bldg.  
(CSMIP Station 24602)

RECORD 24602-CS112-92189.05



Structure Reference Orientation: N=355°

0 1 2 3 4 5 10 15 20 22 Sec.

This page plotted with 4.0x vertical exaggeration.

# Los Angeles - 52-story Office Bldg.

(CSMIP Station 24602)

RECORD 24602-CS112-92189.05

19 Roof: Center - E

16 49th Floor: Center - E

13 35th Floor: Center - E

10 22nd Floor: Center - E

8 14th Floor: Center - E

5 Level A: Center of Tower - E

2 Level E: Center of Tower - E

1 Level E: Center of Tower - Up

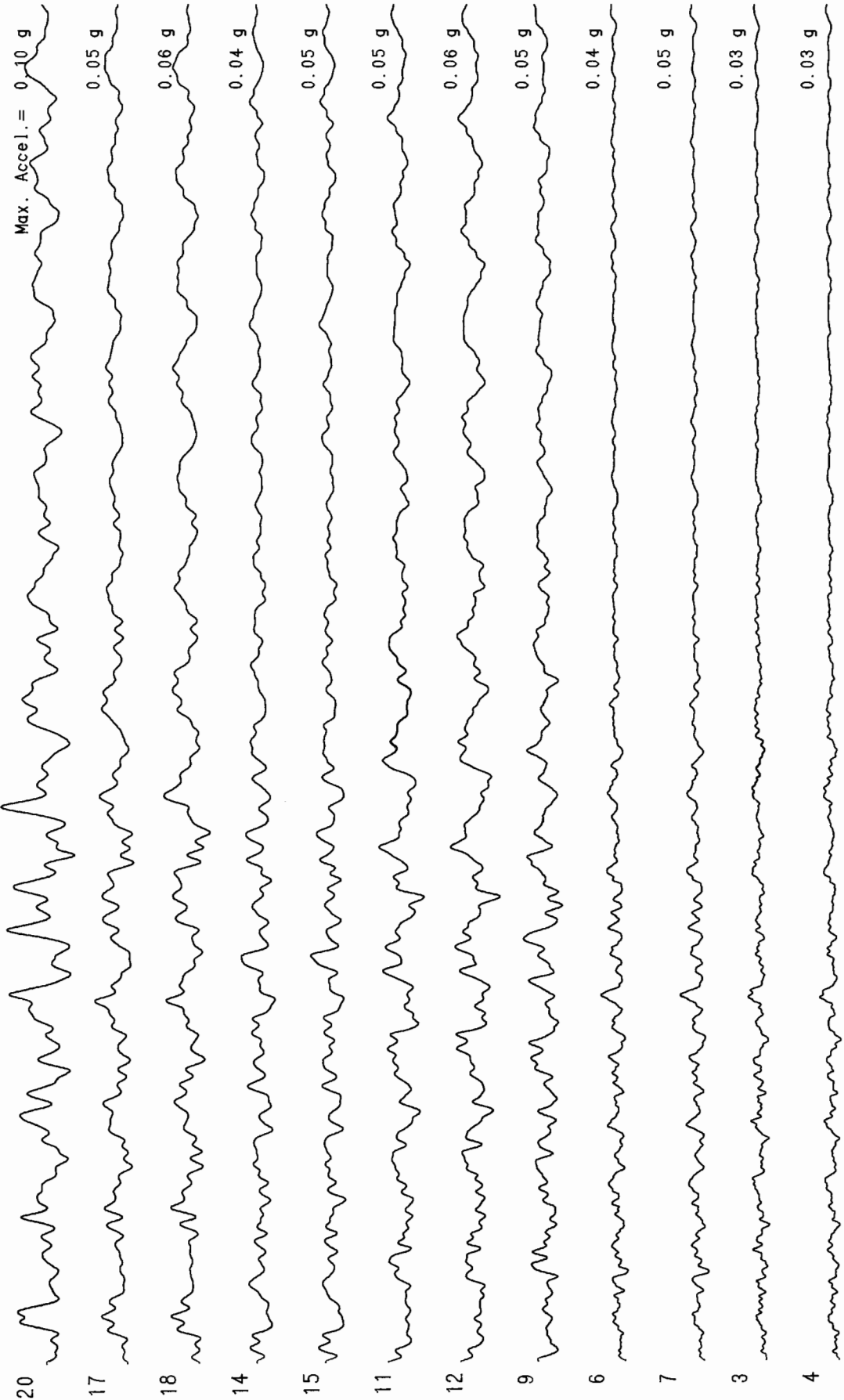
Structure Reference Orientation: N=355°

0 1 2 3 4 5 10 15 20 22 Sec.

This page plotted with 4.0x vertical exaggeration.

Los Angeles - 52-story Office Bldg.  
(CSMIP Station 24602)

RECORD 24602-CS112-92189.05

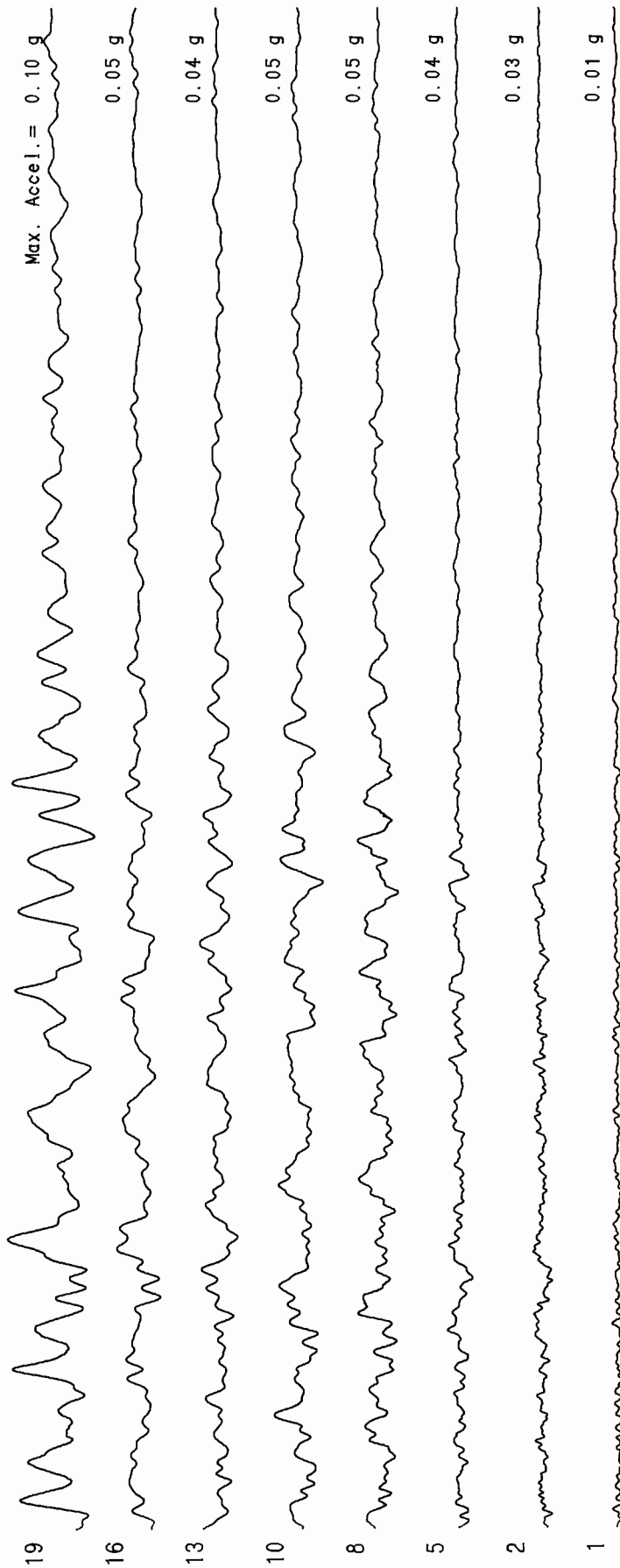


22 25 30 35 40 44 Sec.

This page plotted with 4.0x vertical exaggeration.

Los Angeles - 52-story Office Bldg.  
(CSMIP Station 24602)

RECORD 24602-CS112-92189.05

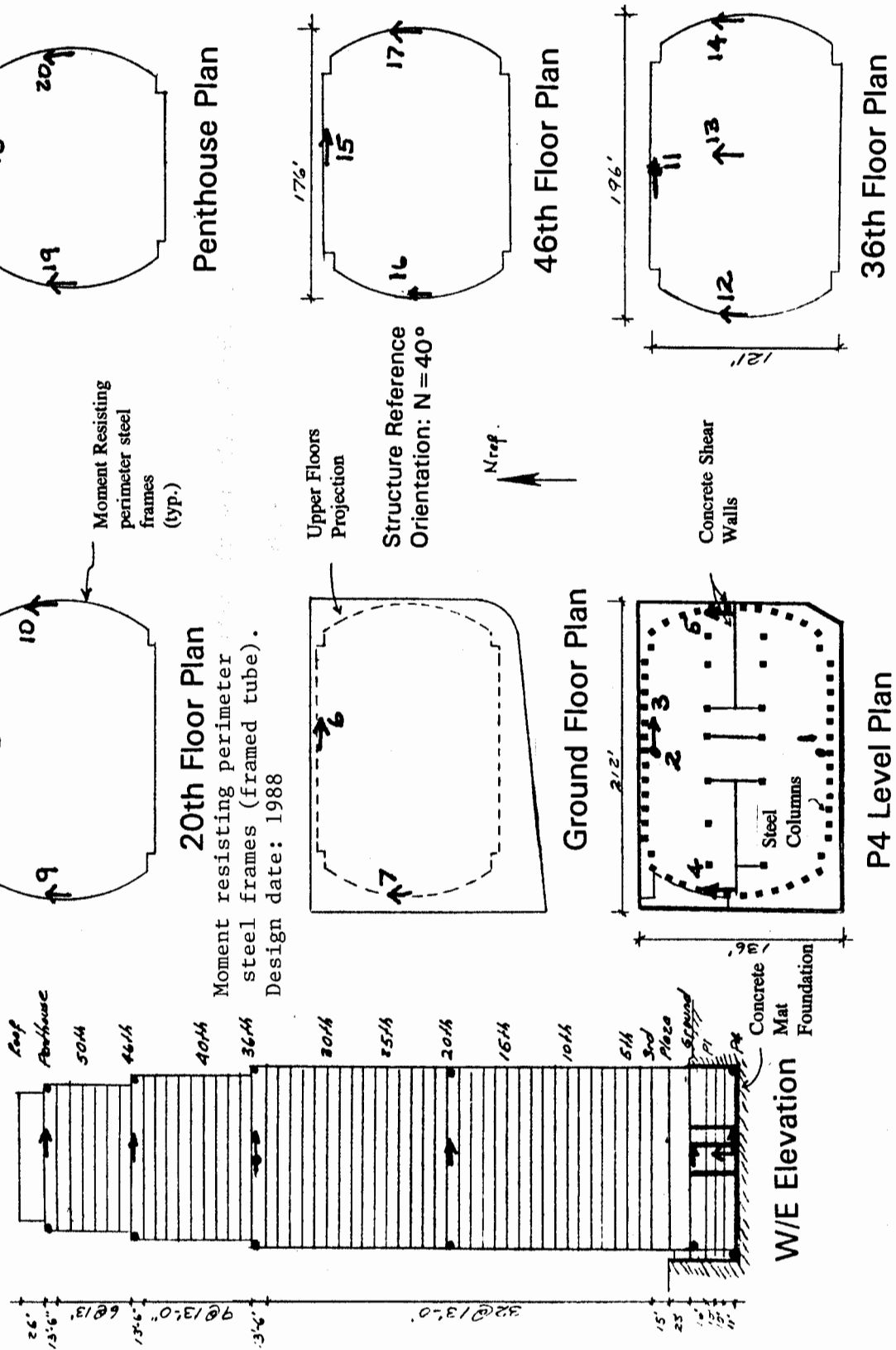


22 25 30 35 40 44 Sec.

This page plotted with 4.0x vertical exaggeration.

# Los Angeles - 54-story Office Bldg. (CSMIP Station No. 24629)

## SENSOR LOCATIONS



Los Angeles - 54-story Office Bldg.

(CSMIP Station 24629)

RECORD 24629-CS125-92190.05

19 Penthouse: W. Wall - N

20 Penthouse: E. Wall - N

16 46th Floor: W. Wall - N

17 46th Floor: E. Wall - N

12 36th Floor: W. Wall - N

13 36th Floor: Center - N

14 36th Floor: E. Wall - N

9 20th Floor: W. Wall - N

10 20th Floor: E. Wall - N

7 Ground Floor: W. Wall - N

4 Level P4: W. Wall - N

5 Level P4: E. Wall - N

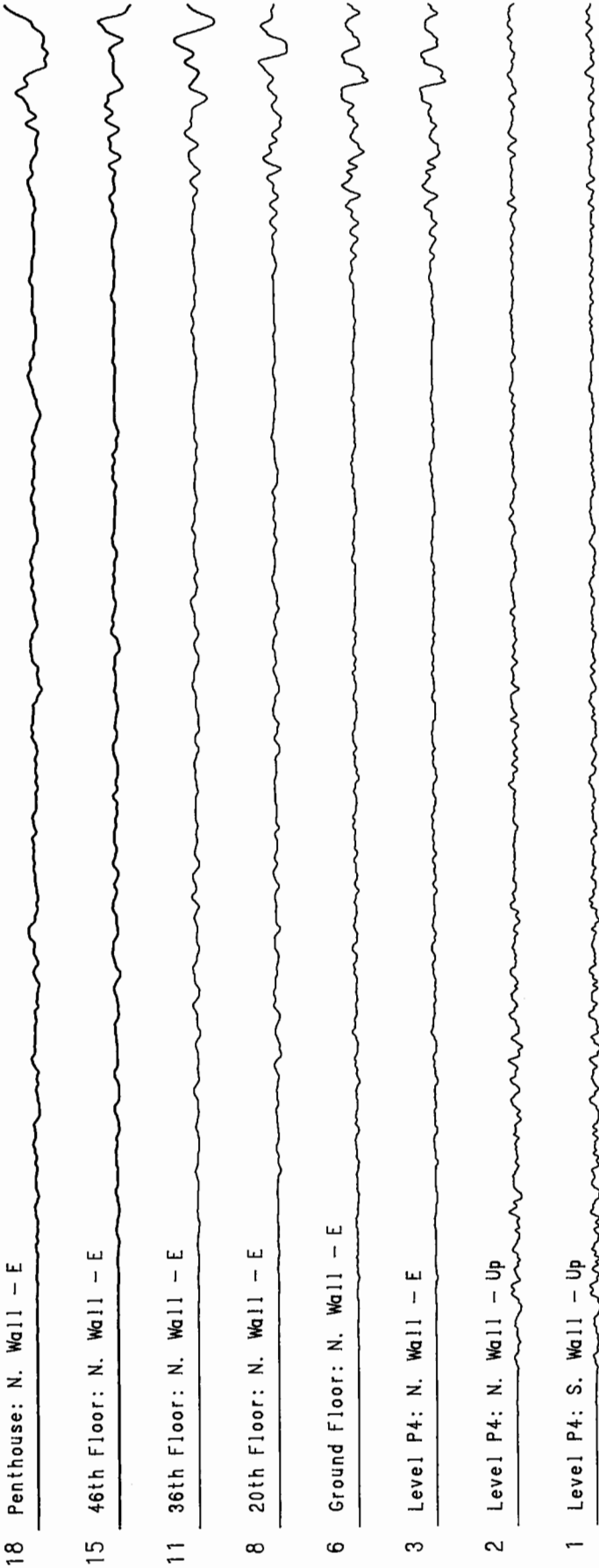
Structure Reference Orientation: N=40°

0 1 2 3 4 5 10 15 20 22 Sec.

This page plotted with 4.0x vertical exaggeration.

Los Angeles - 54-story Office Bldg.  
(CSMIP Station 24629)

RECORD 24629-CS125-92190.05



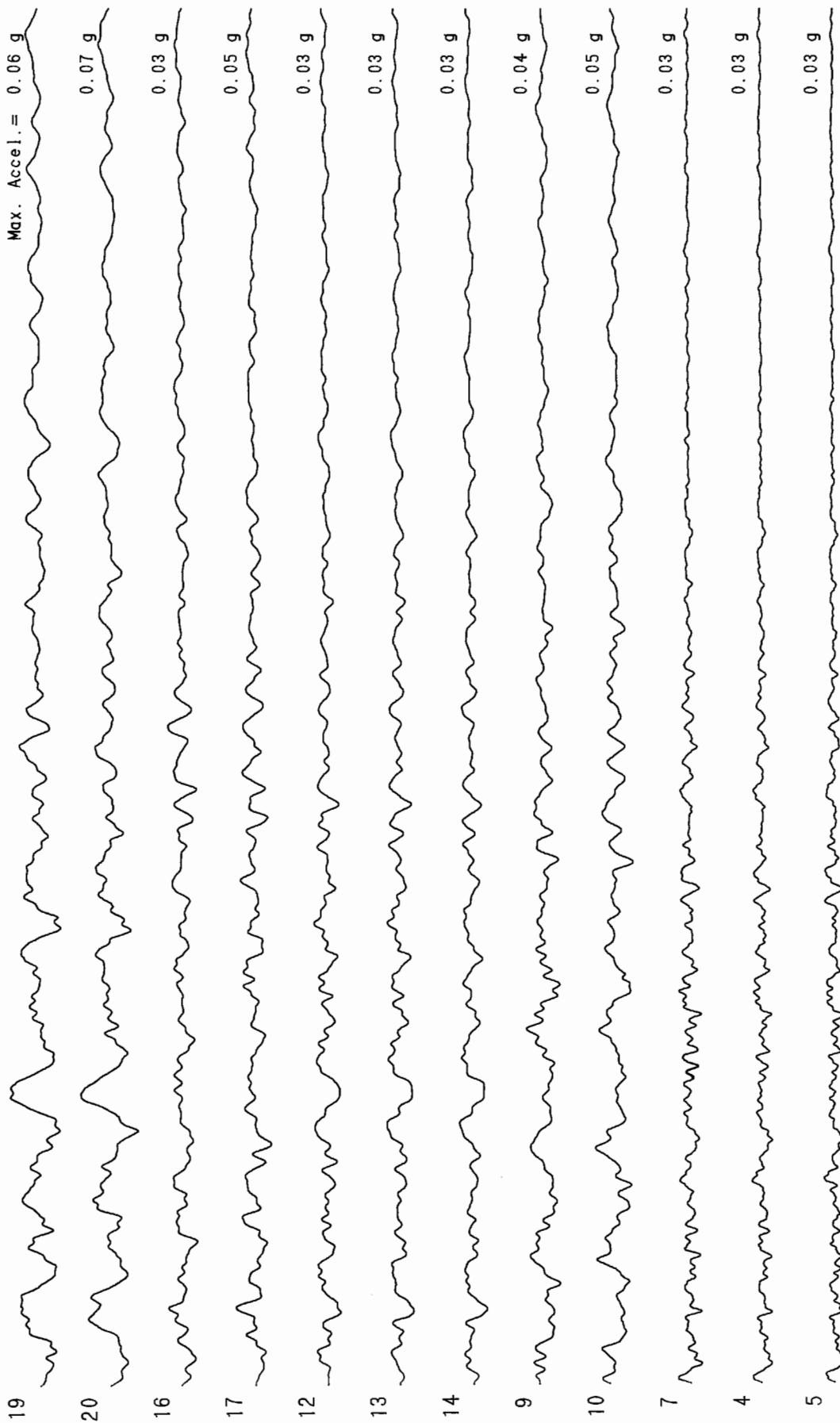
Structure Reference Orientation: N=40°

0 1 2 3 4 5 10 15 20 22 Sec.

This page plotted with 4.0x vertical exaggeration.

Los Angeles - 54-story Office Bldg.  
(CSMIP Station 24629)

RECORD 24629-CS125-92190.05

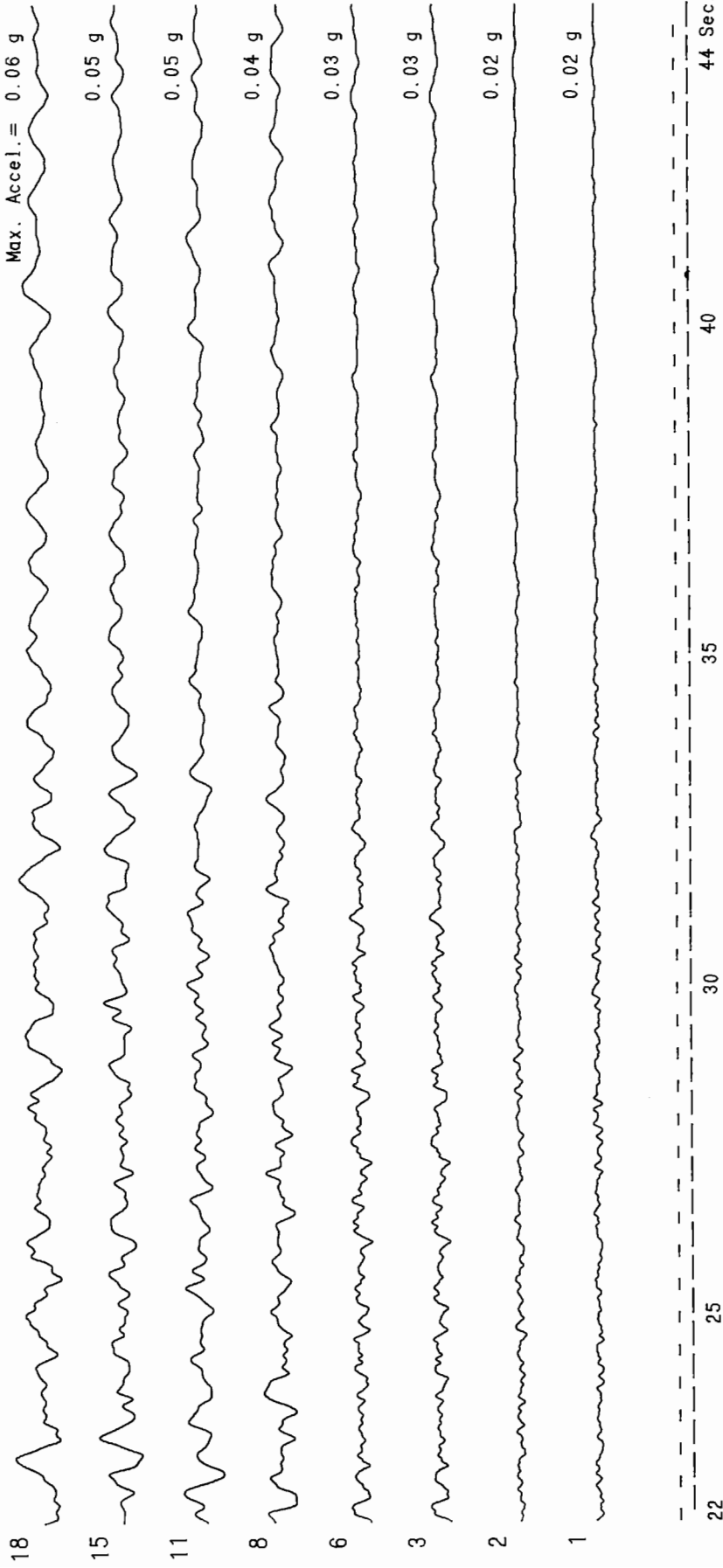


22 25 30 35 40 44 Sec.

This page plotted with 4.0x vertical exaggeration.

Los Angeles - 54-story Office Bldg.  
(CSMIP Station 24629)

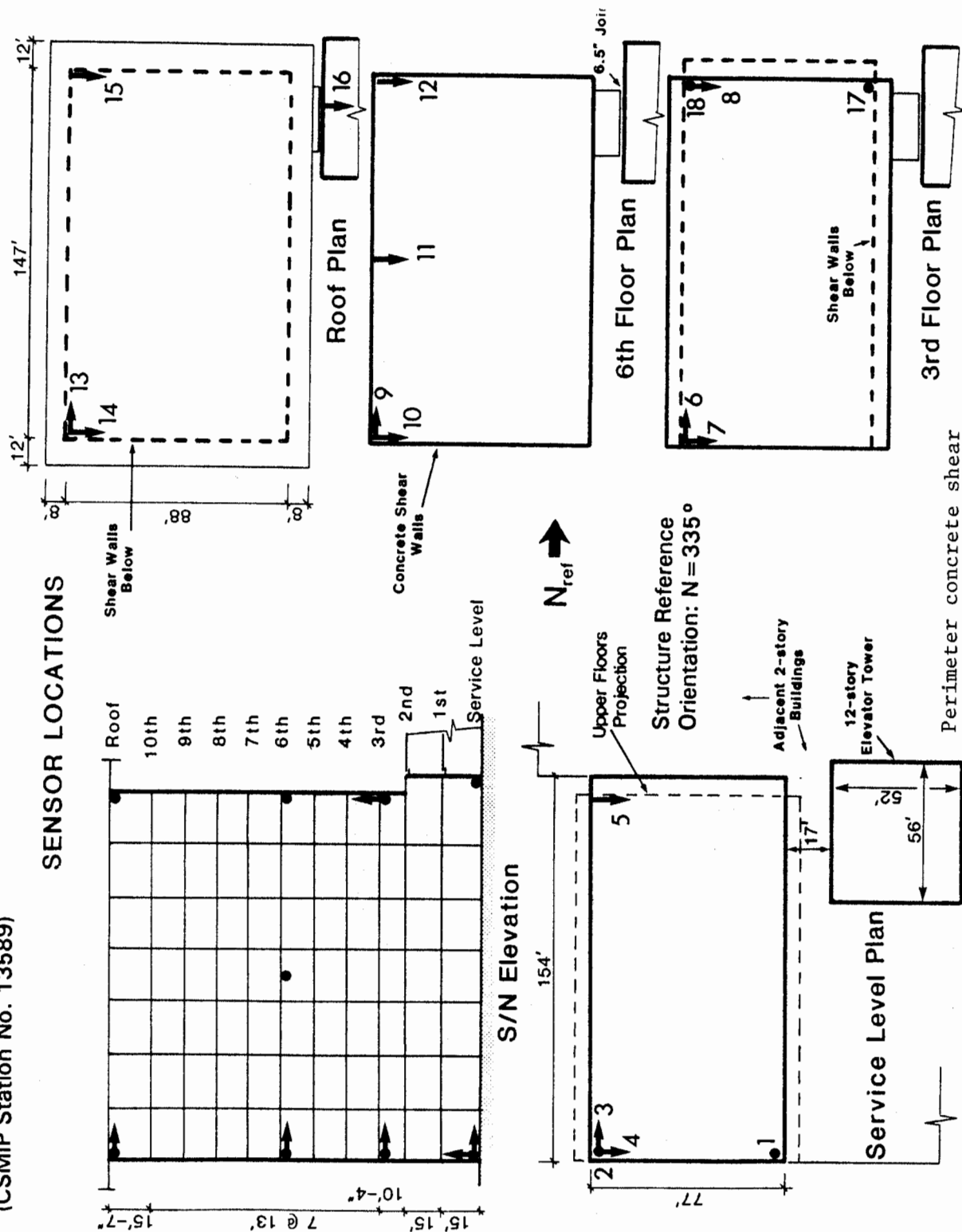
RECORD 24629-CS125-92190.05



This page plotted with 4.0x vertical exaggeration.

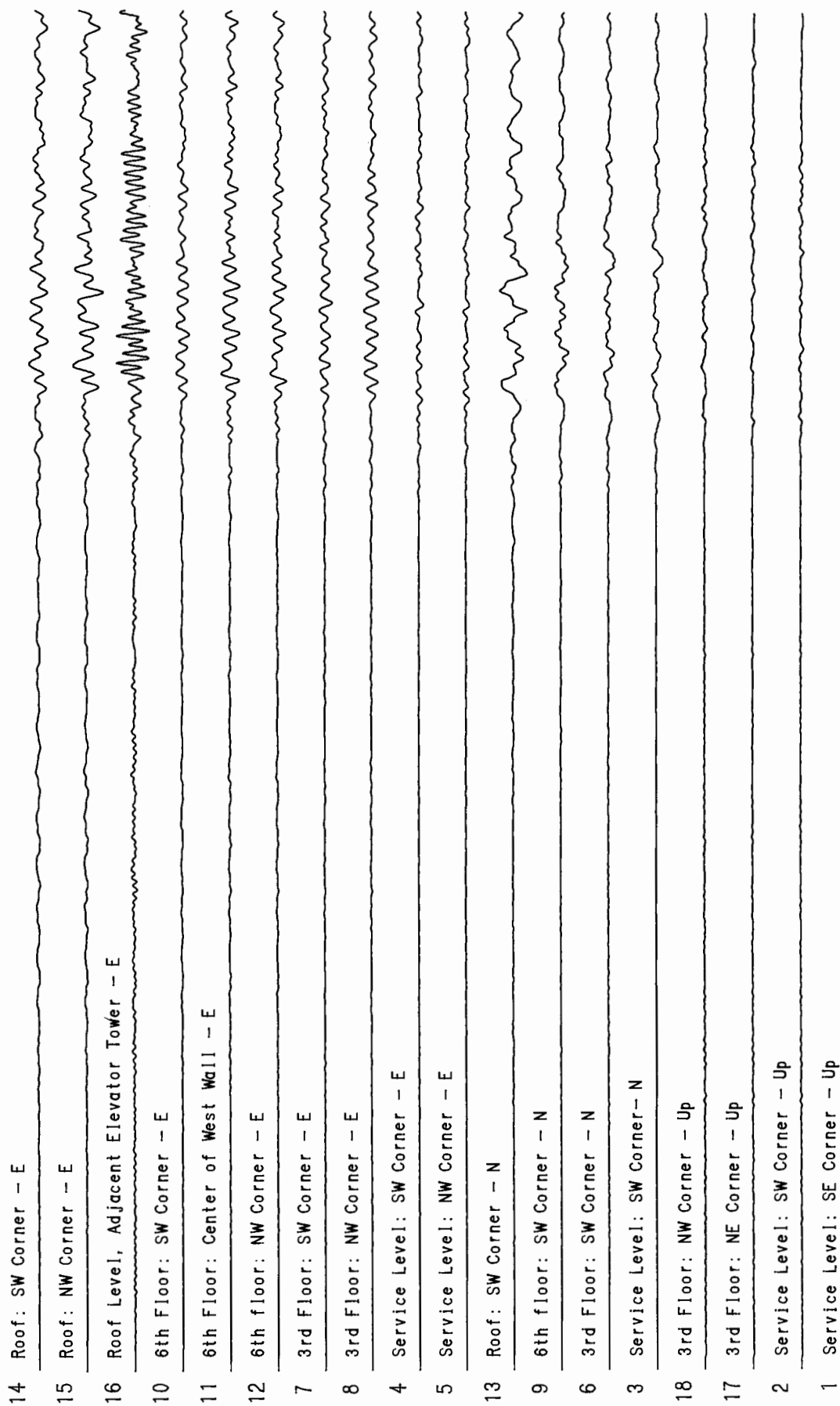
# Newport Beach - 11-story Hospital (CSMP Station No. 13589)

## SENSOR LOCATIONS



# Newport Beach - 11-story Hospital (CSMIP Station 13589)

RECORD 13589-CS108-92184.10

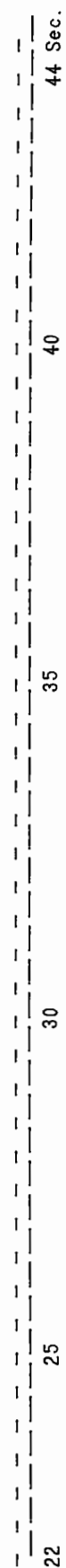
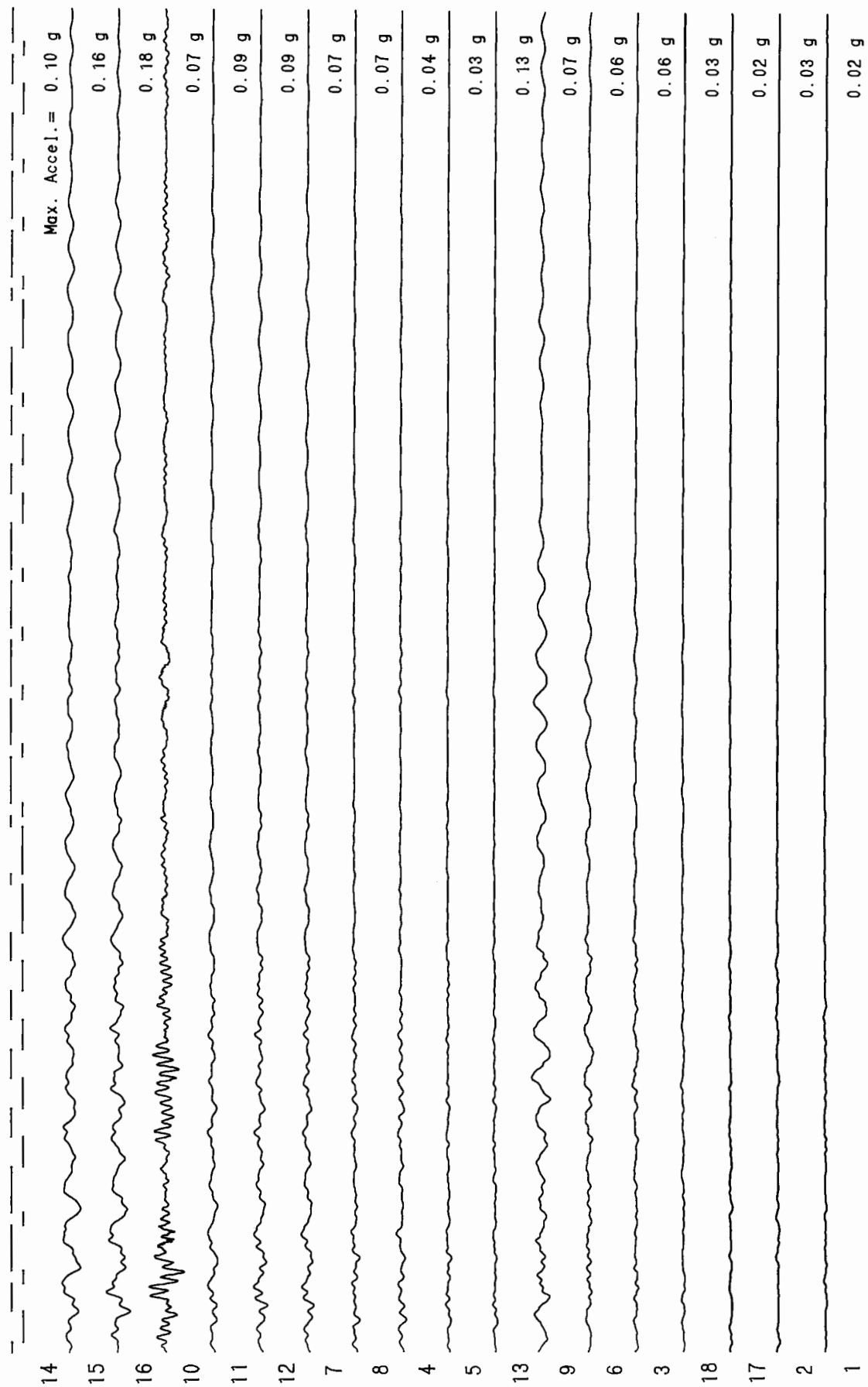


Structure Reference Orientation: N=335°

0 1 2 3 4 5 10 15 20 22 Sec.

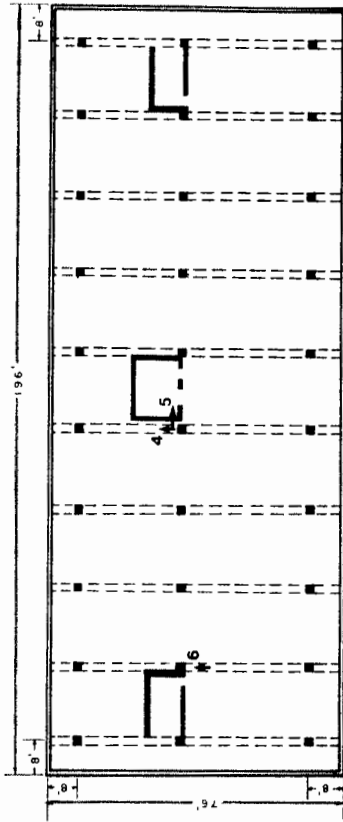
# Newport Beach - 11-story Hospital (CSMIP Station 13589)

RECORD 13589-CS108-92184.10

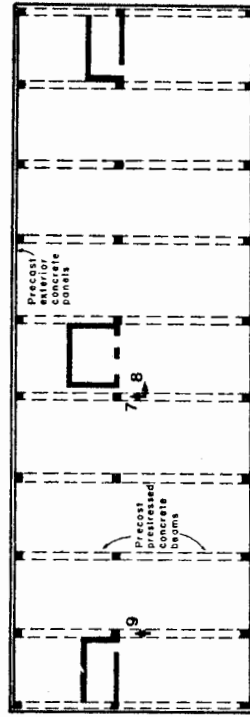


Palm Desert - 4-story Medical Office Bldg.  
(CSMIP Station No. 12284)

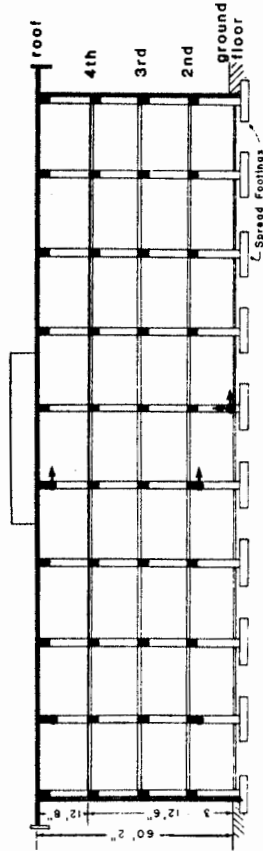
SENSOR LOCATIONS



Roof Plan



2nd Floor Plan

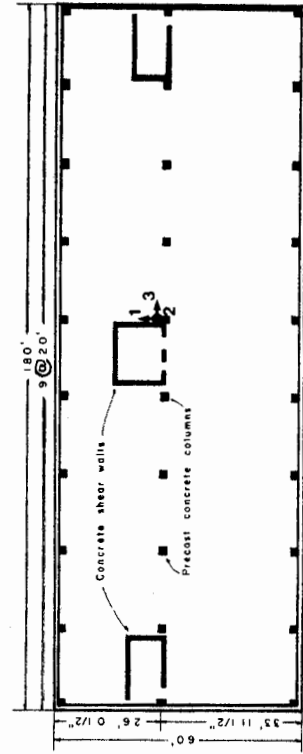


W/E Elevation

Precast concrete shear walls and  
precast concrete elements.  
Design date: 1974



Structure Reference  
Orientation: N = 0°



Ground Level Plan

Palm Desert - 4-story Medical Office Bldg.

(CSMIP Station 12284)

Record 12284-C0132-92180.08

1 Ground Floor - N

Max. Accel. = 0.07 g

2 " - Up

0.04 g

3 " - E

0.06 g

4 Roof: Center - N

0.08 g

5 " Center - E

0.11 g

6 " West Wall - N

0.09 g

7 2nd Floor: Center - N

0.07 g

8 " Center - E

0.06 g

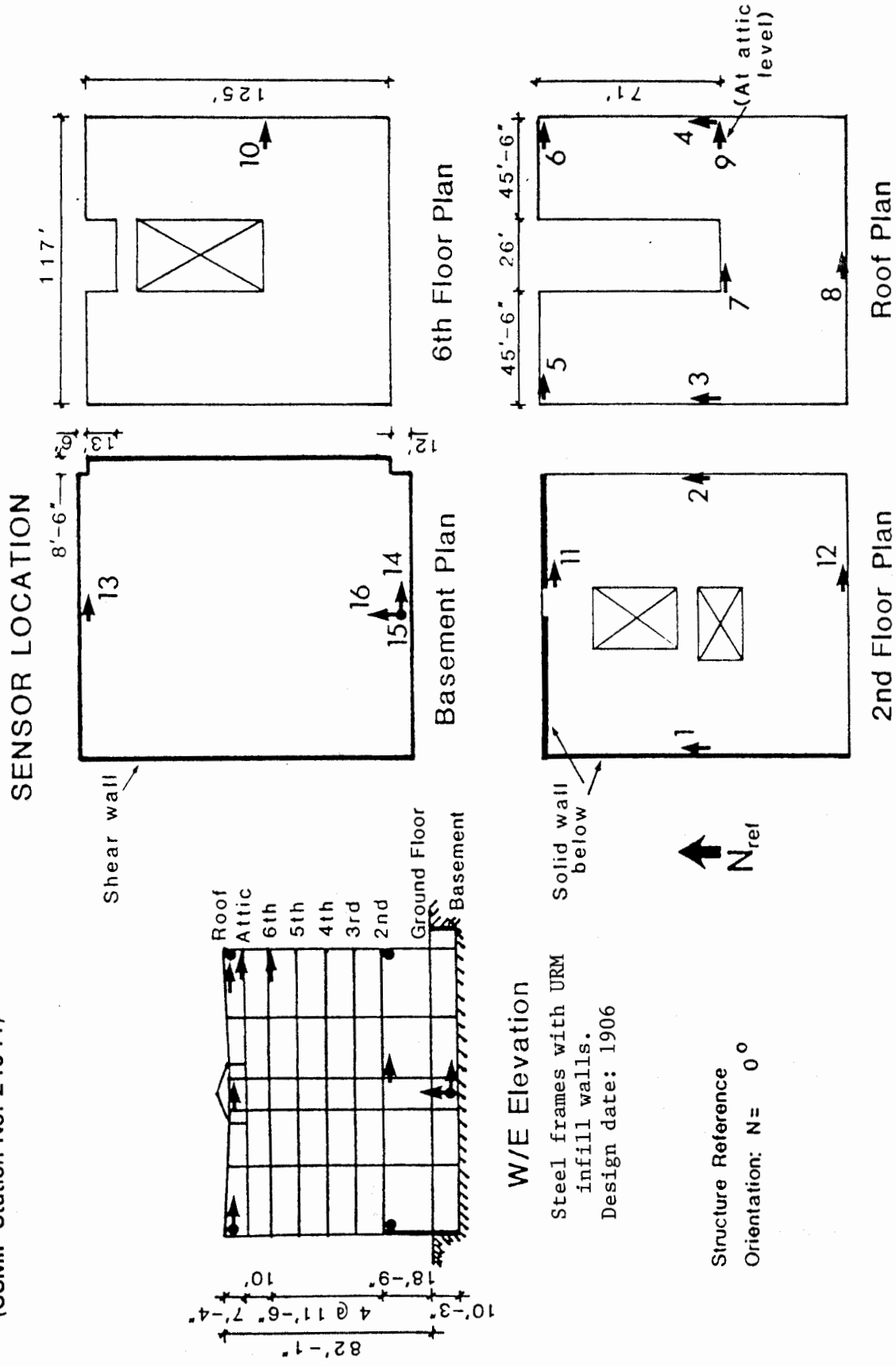
9 " West Wall - N

0.07 g

Structure Reference Orientation: N=0°



# Pasadena - 6-story Office Bldg. (CSMP Station No. 24541)

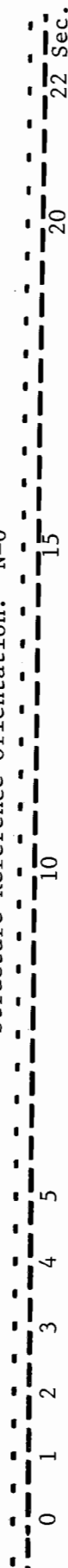


Pasadena - 6-story Office Bldg.  
(CSMIP Station 24541)

Record 24541-C0281-92183.03

1	2nd Floor: W. Wall - N	Max. Accel. = 0.03 g
2	" E. Wall - N	0.03 g
3	Roof: W. Wall - N	0.06 g
4	" E. Wall - N	0.03 g
5	Roof: N. Wall of W. Wing - E	0.05 g
6	" N. Wall of E. Wing - E	0.05 g
7	" Interior Wall, Center - E	0.05 g
8	" S. Wall, Center - E	0.04 g
9	Attic Level: W. Wall, Center - E	0.03 g
10	6th Floor: E. Wall, Center - E	0.04 g
11	2nd Floor: N. Wall - E	0.03 g
12	" S. Wall - E	0.03 g
13	Basement: N. Wall - E	0.05 g

Structure Reference Orientation: N=0°



Pasadena - 6-story Office Bldg.  
(CSMIP Station 24541)

Record 24541-S1869-92183.03

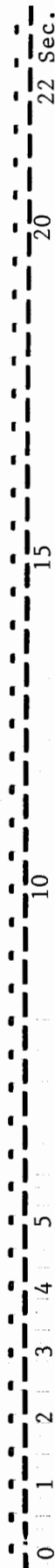


14 Basement: S. Wall - E Max. Accel. = 0.03 g

15 " " - Up 0.03 g

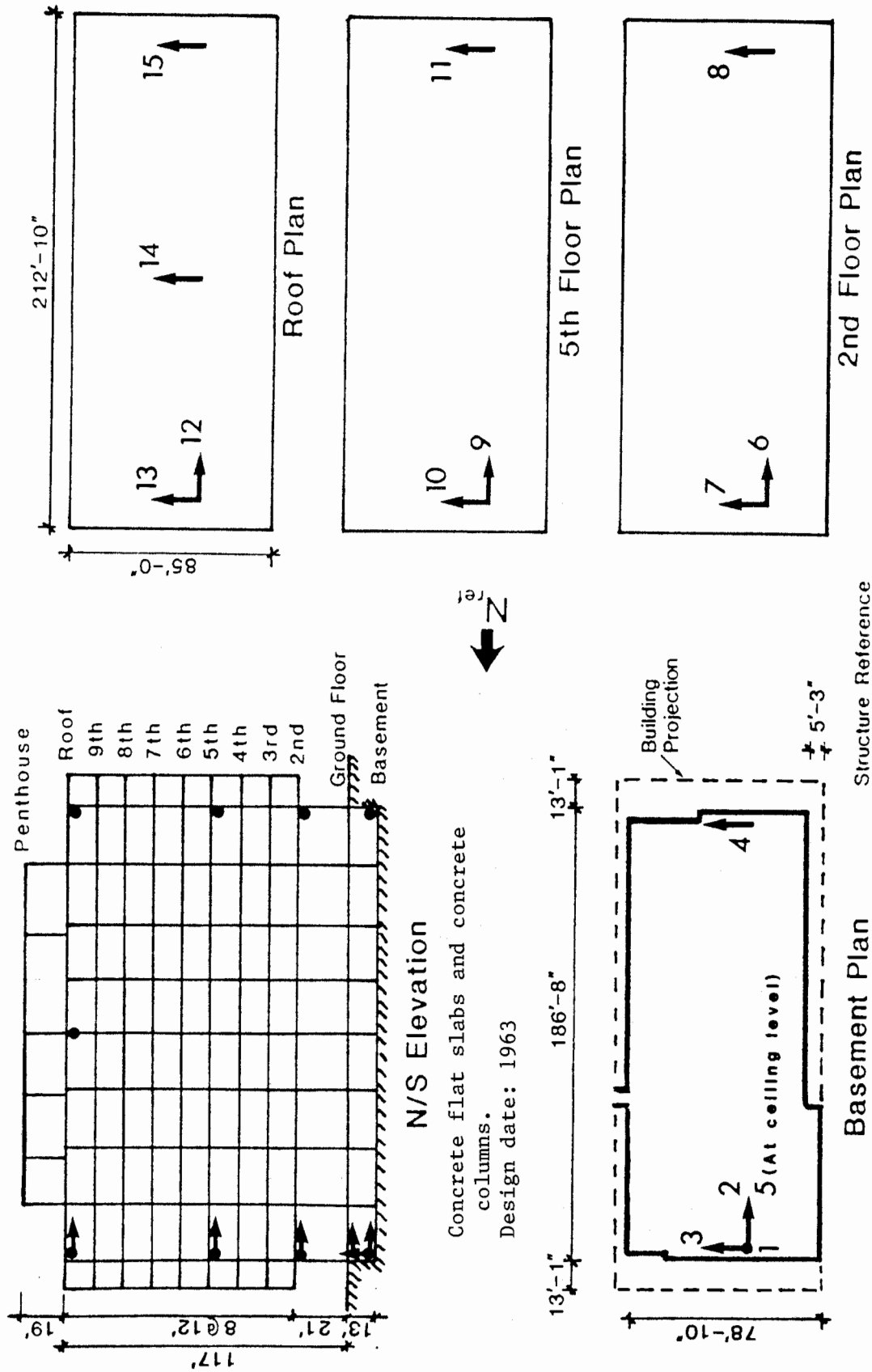
16 " " - N 0.03 g

Structure Reference Orientation: N=0°



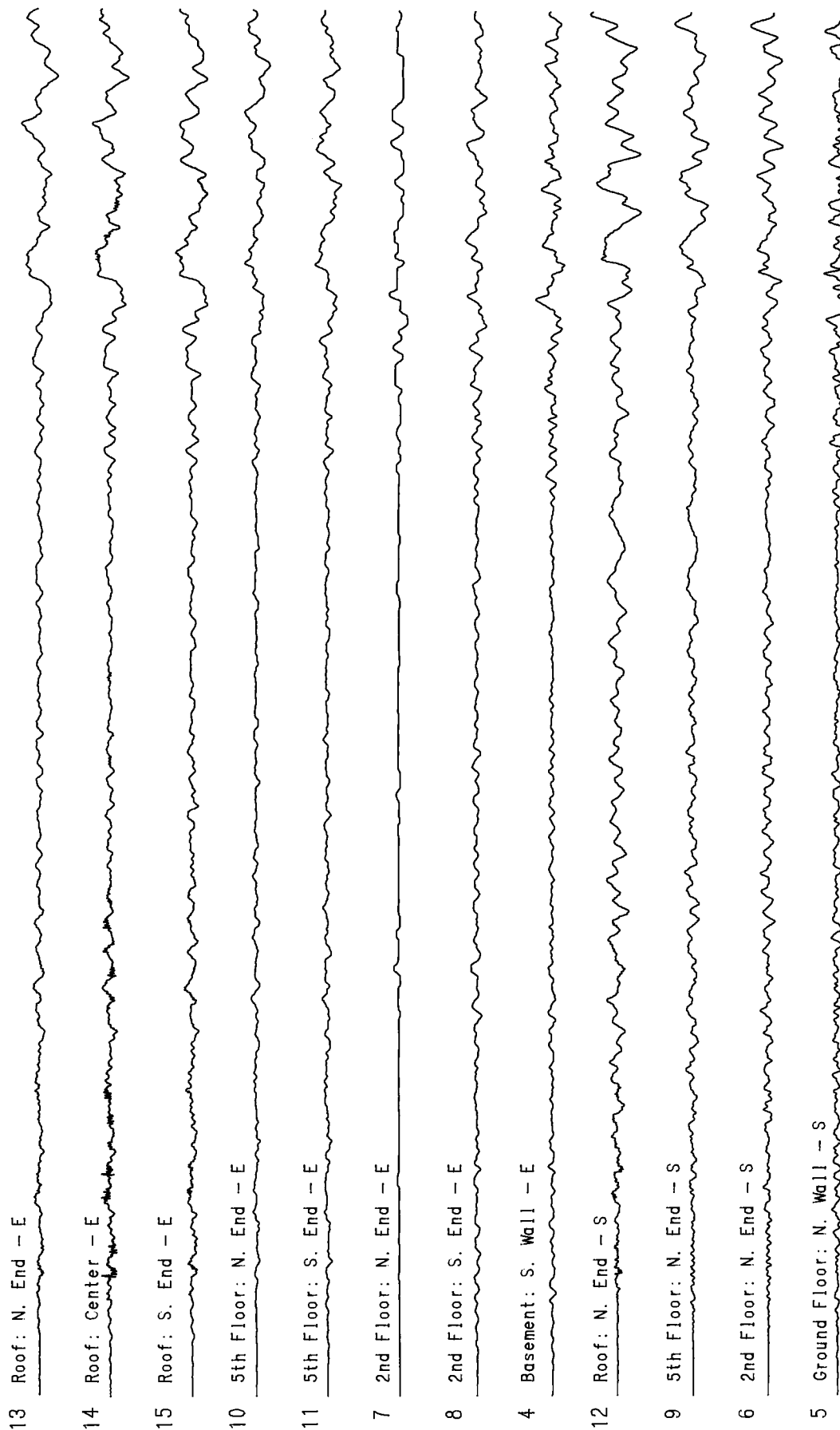
Pasadena - 9-story Commercial Bldg.  
(CSMIP Station No. 24571)

SENSOR LOCATION



Pasadena - 9-story Commercial Bldg.  
(CSMIP Station 24571)

RECORD 24571-CD112-92184.05



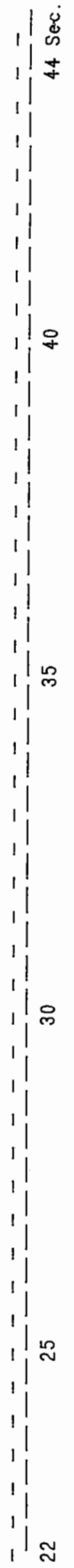
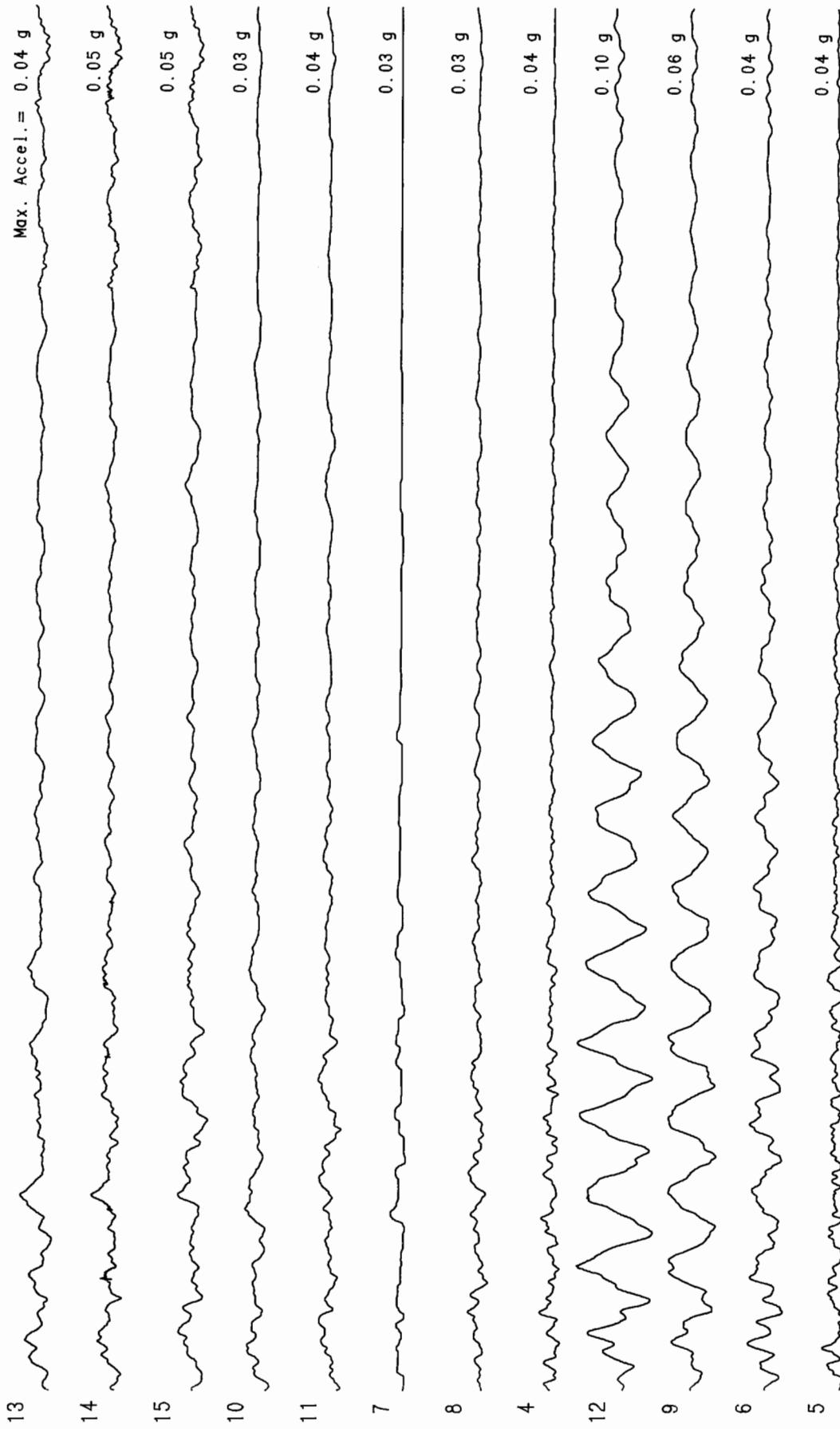
Structure Reference Orientation:  $N=0^\circ$

0 1 2 3 4 5 10 15 20 22 Sec.

This page plotted with 4.x vertical exaggeration.

Pasadena - 9-story Commercial Bldg.  
(CSMIP Station 24571)

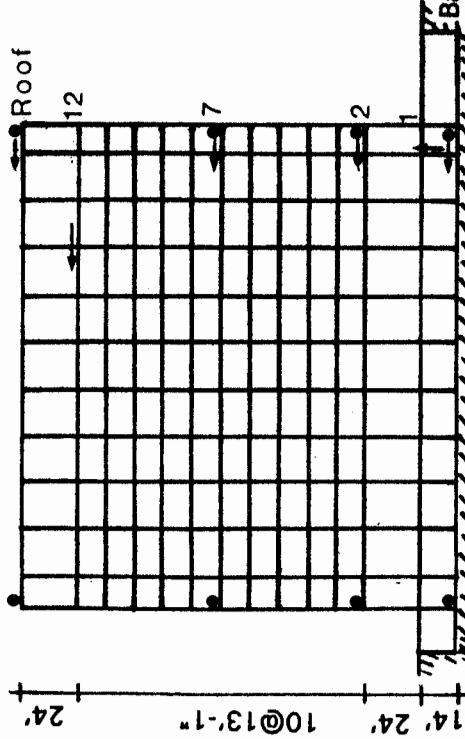
RECORD 24571-CD112-92184.05



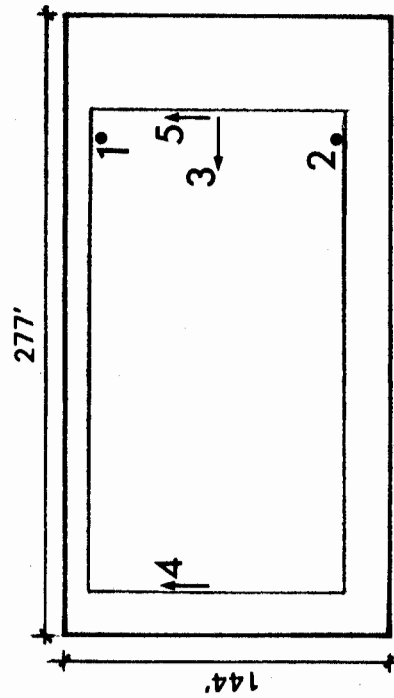
This page plotted with 4.x vertical exaggeration.

Pasadena - 12-story Commercial/Office Bldg.  
(CSMIP Station No. 24546)

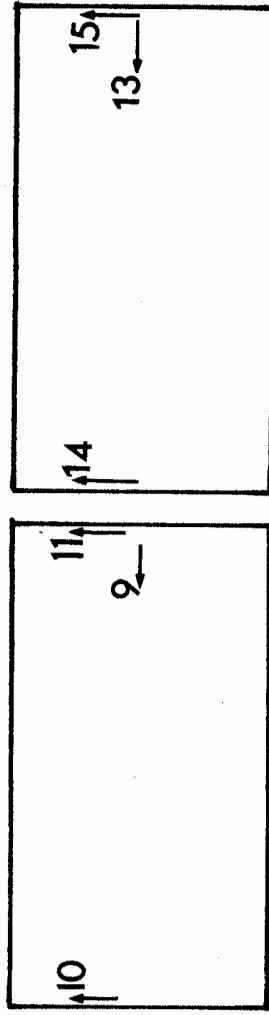
SENSOR LOCATIONS



W/E Elevation

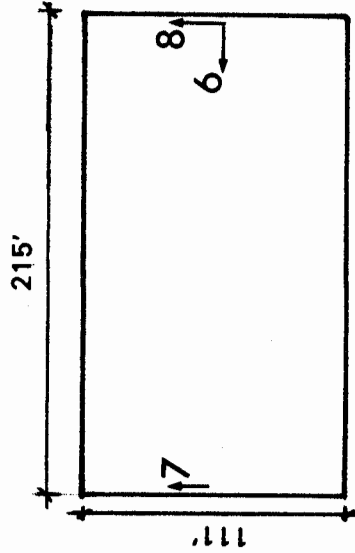


Basement Plan

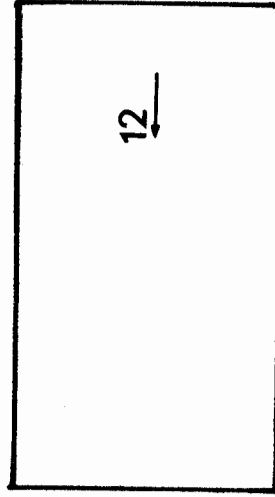


7th Floor Plan

Structure Reference  
 $N_{ref}$  Orientation:  $N=0^\circ$



2nd Floor Plan

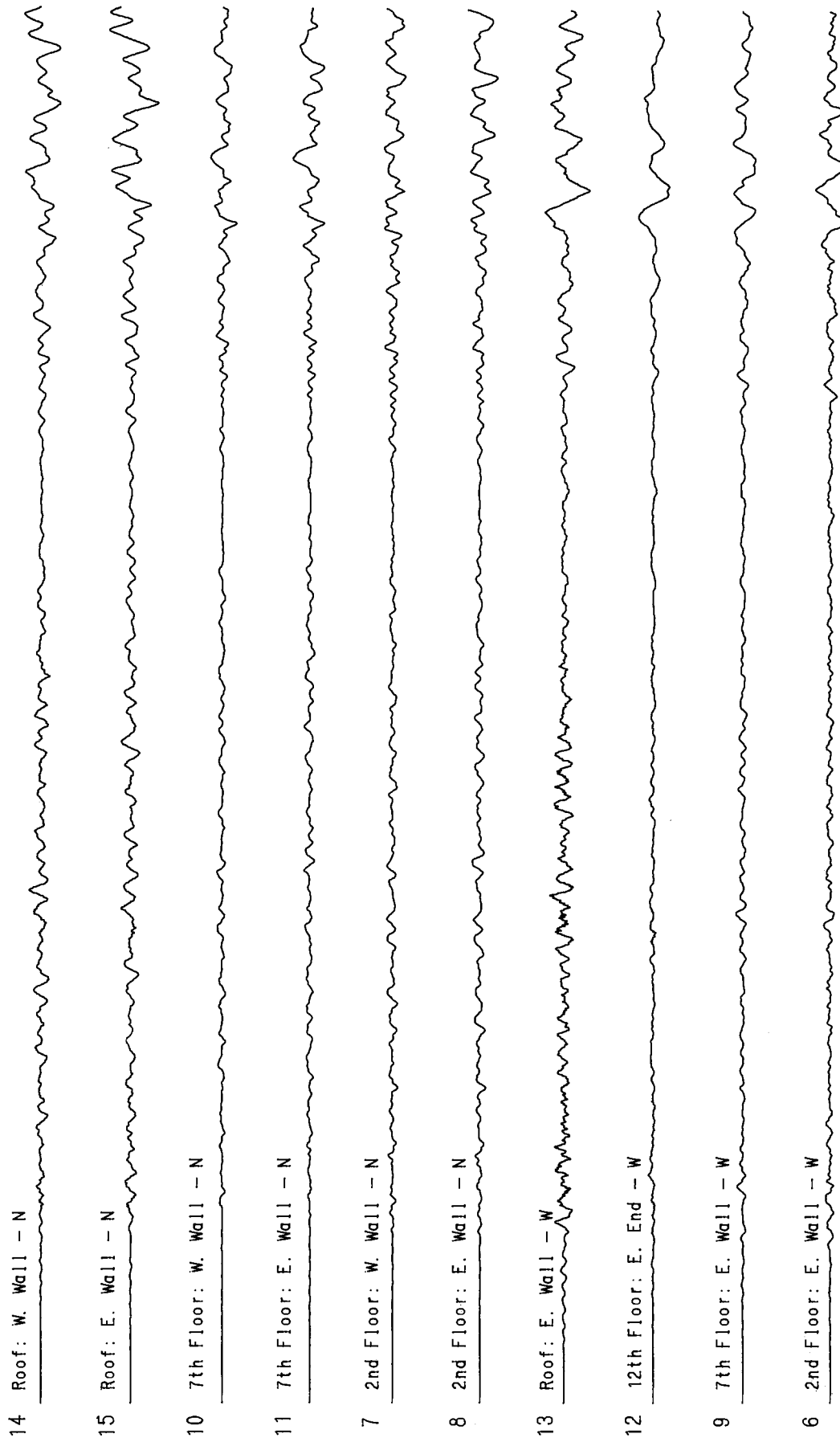


12th Floor Plan

Moment resisting steel frames around the perimeter and the core of the bldg.  
Design date: 1971

Pasadena - 12-story Commercial/Office Bldg.  
(CSMIP Station 24546)

RECORD 24546-CD270-92183.03



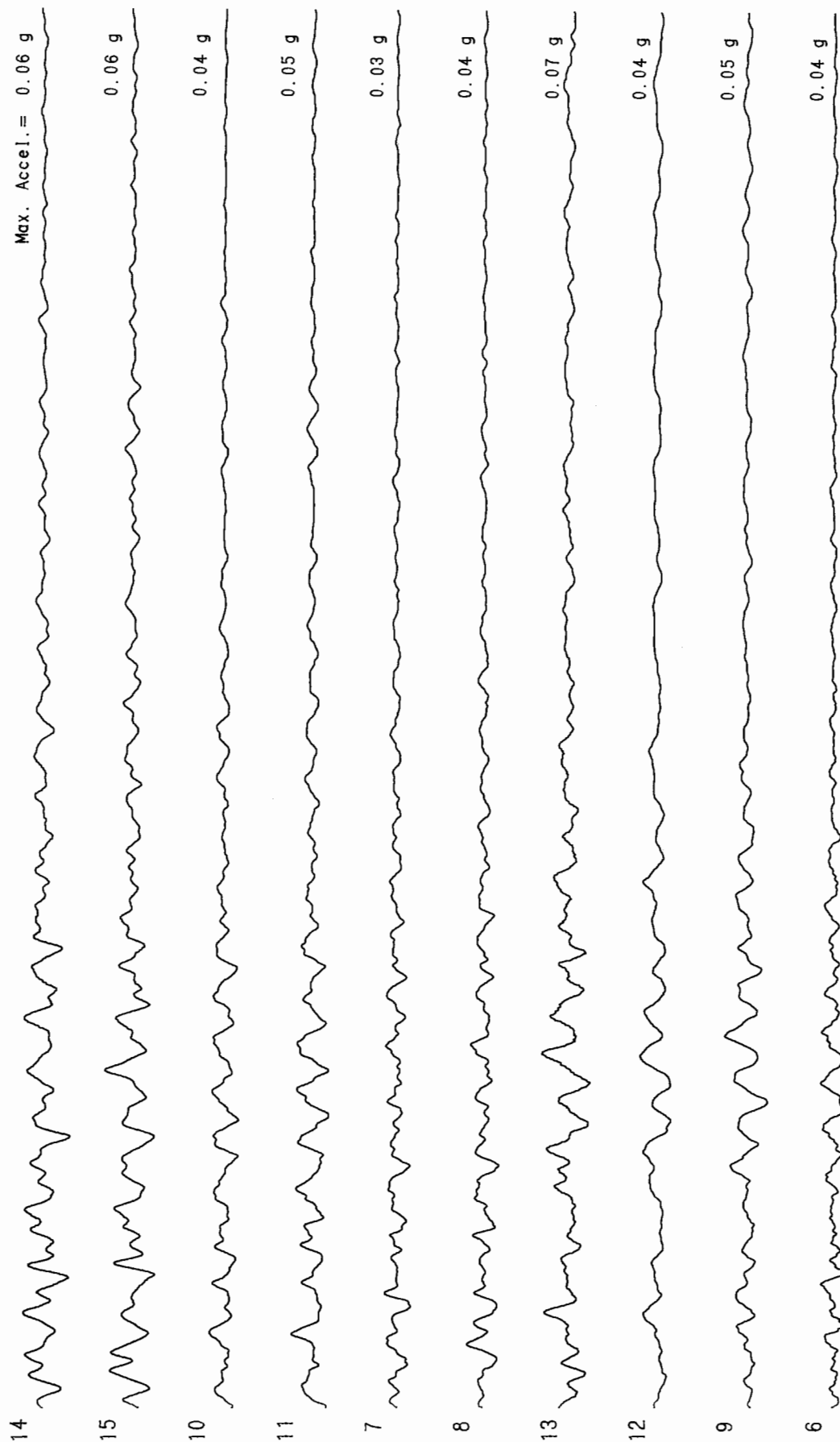
Structure Reference Orientation: N=0°

0 1 2 3 4 5 10 15 20 22 Sec.

This page plotted with 4.x vertical exaggeration.

Pasadena - 12-story Commercial/Office Bldg.  
(CSMIP Station 24546)

RECORD 24546-CD270-92183.03

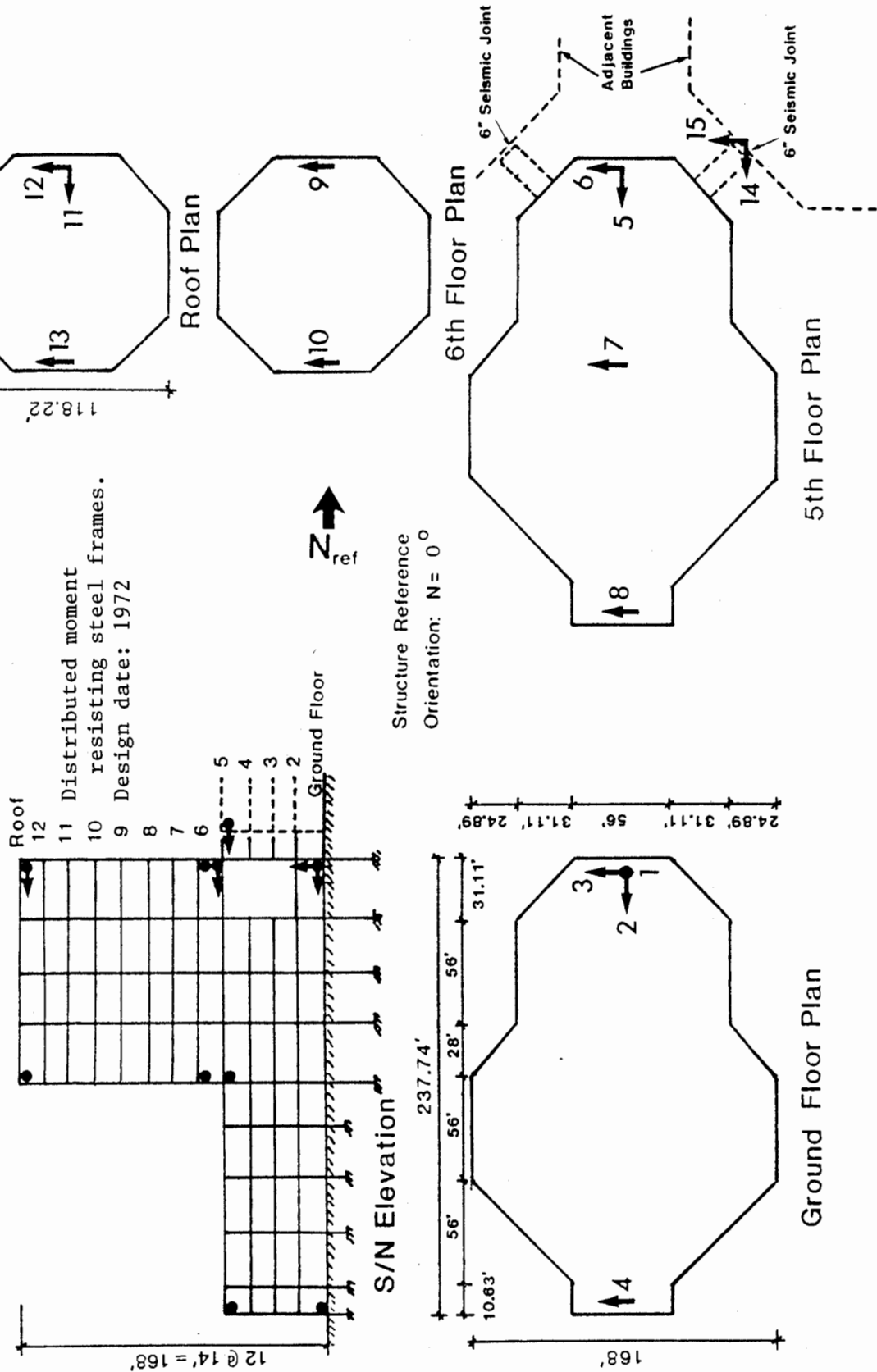


22 25 30 35 40 44 Sec.

This page plotted with 4.x vertical exaggeration.

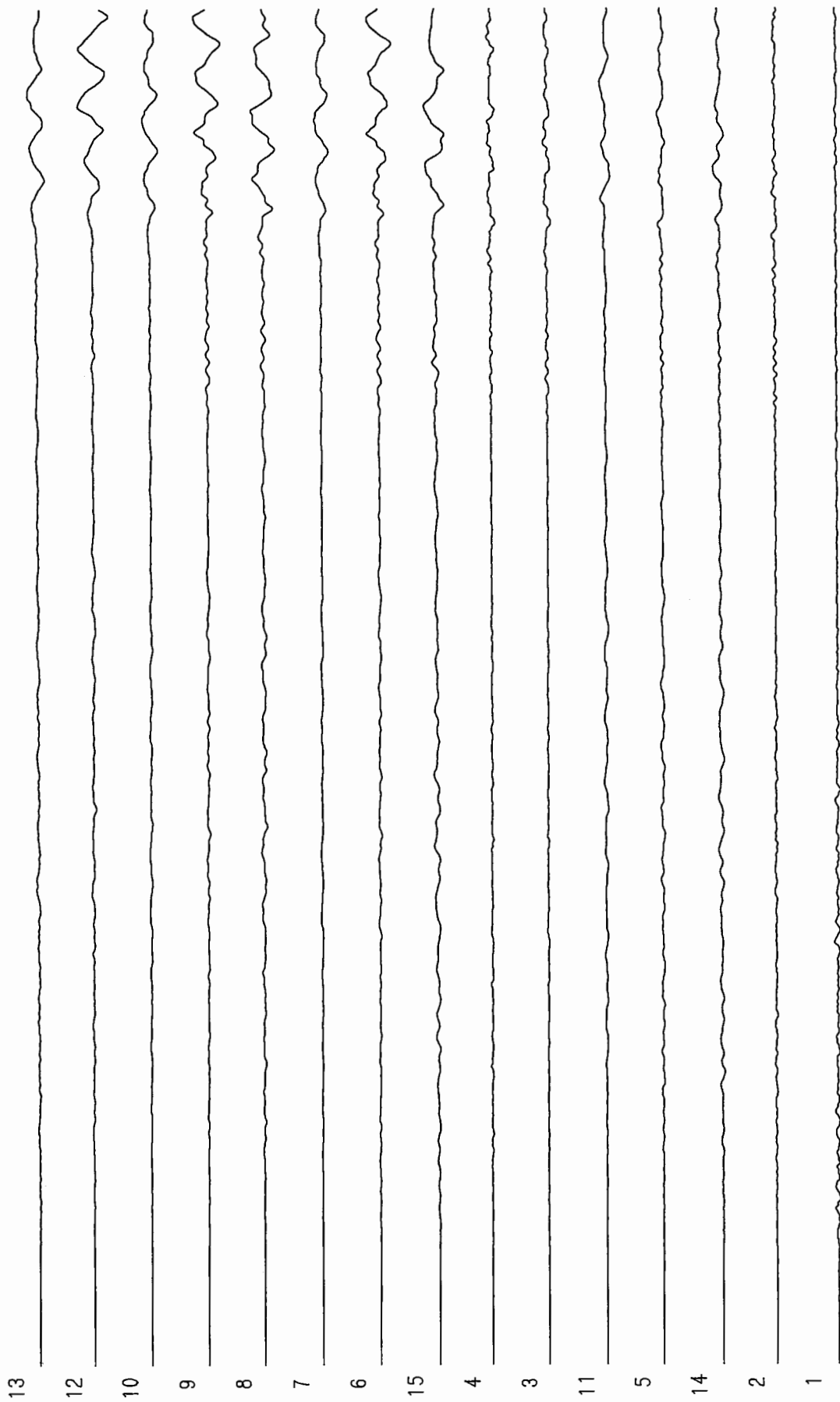
**Pasadena - 12-story Office Bldg.**  
(CSMIP Station No. 24566)

**SENSOR LAYOUT**



Pasadena - 12-story Office Bldg.  
(CSMIP Station 24566)

RECORD 24566-CD110-92184.04

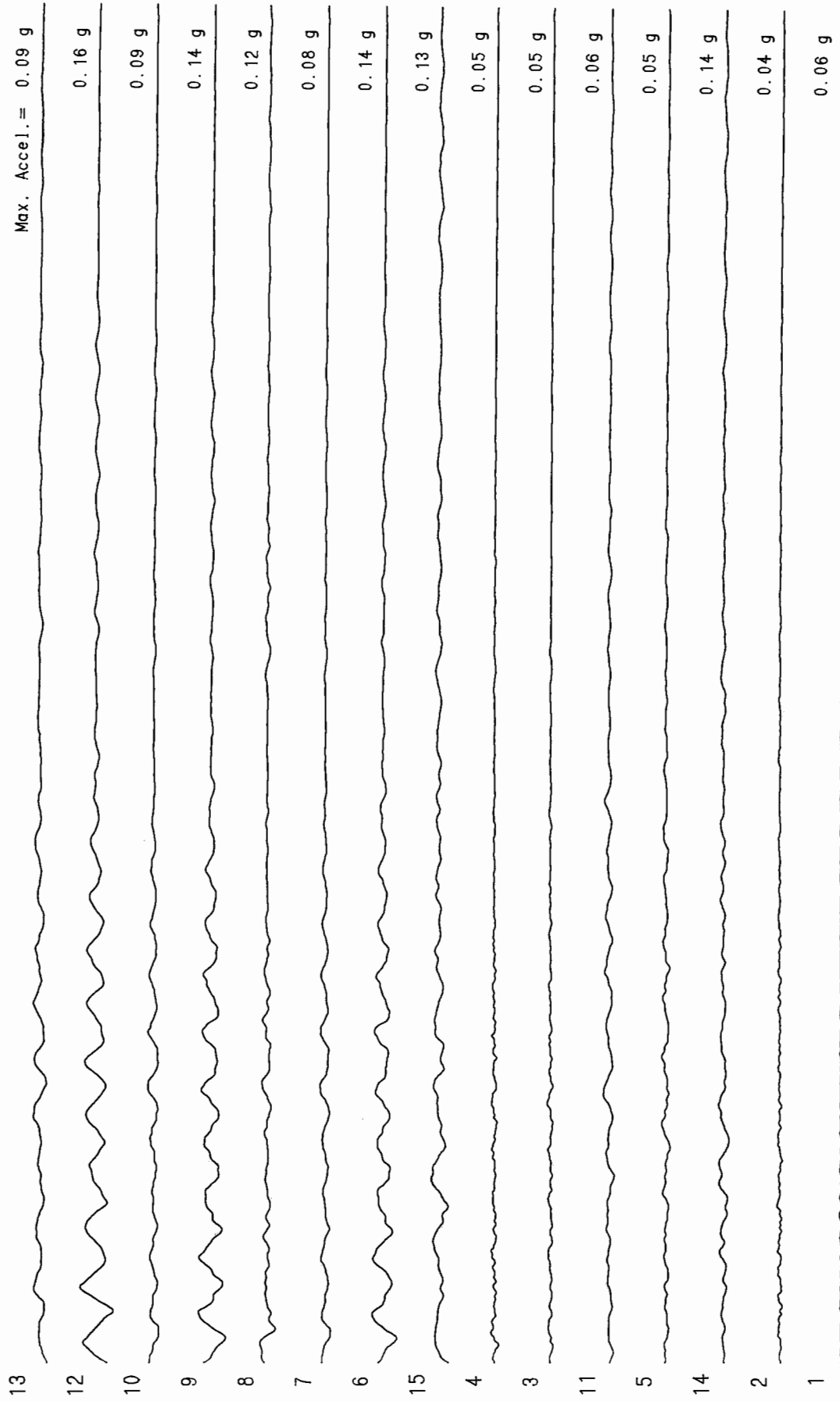


System undergoing testing and recalibration at time of report preparation.

0 1 2 3 4 5 10 15 20 22 Sec.

Pasadena - 12-story Office Bldg.  
(CSMIP Station 24566)

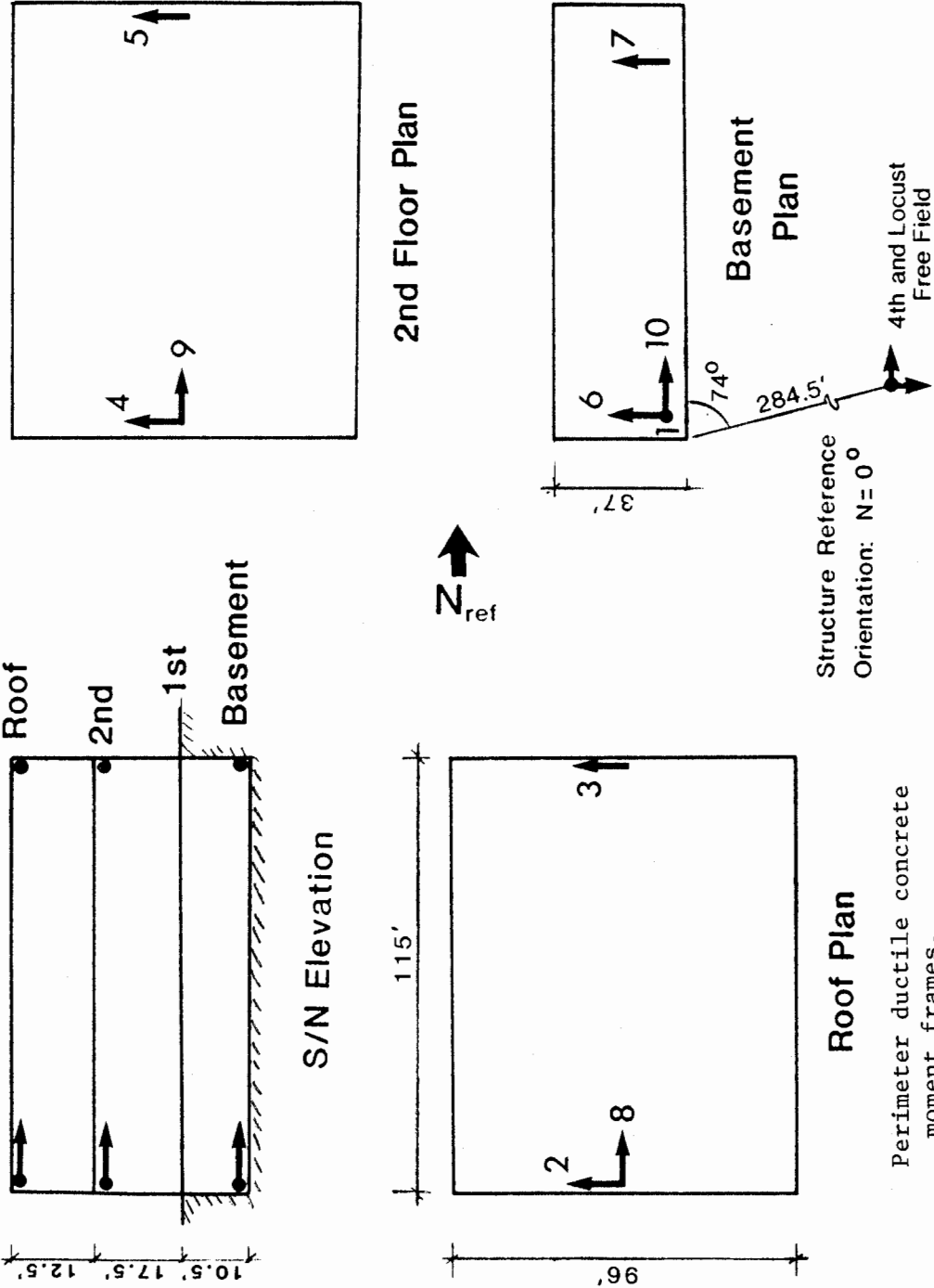
RECORD 24566-CD110-92184.04



22 25 30 35 40 44 Sec.

Pomona - 2-story Commercial Bldg.  
(CSMIP Station No. 23511)

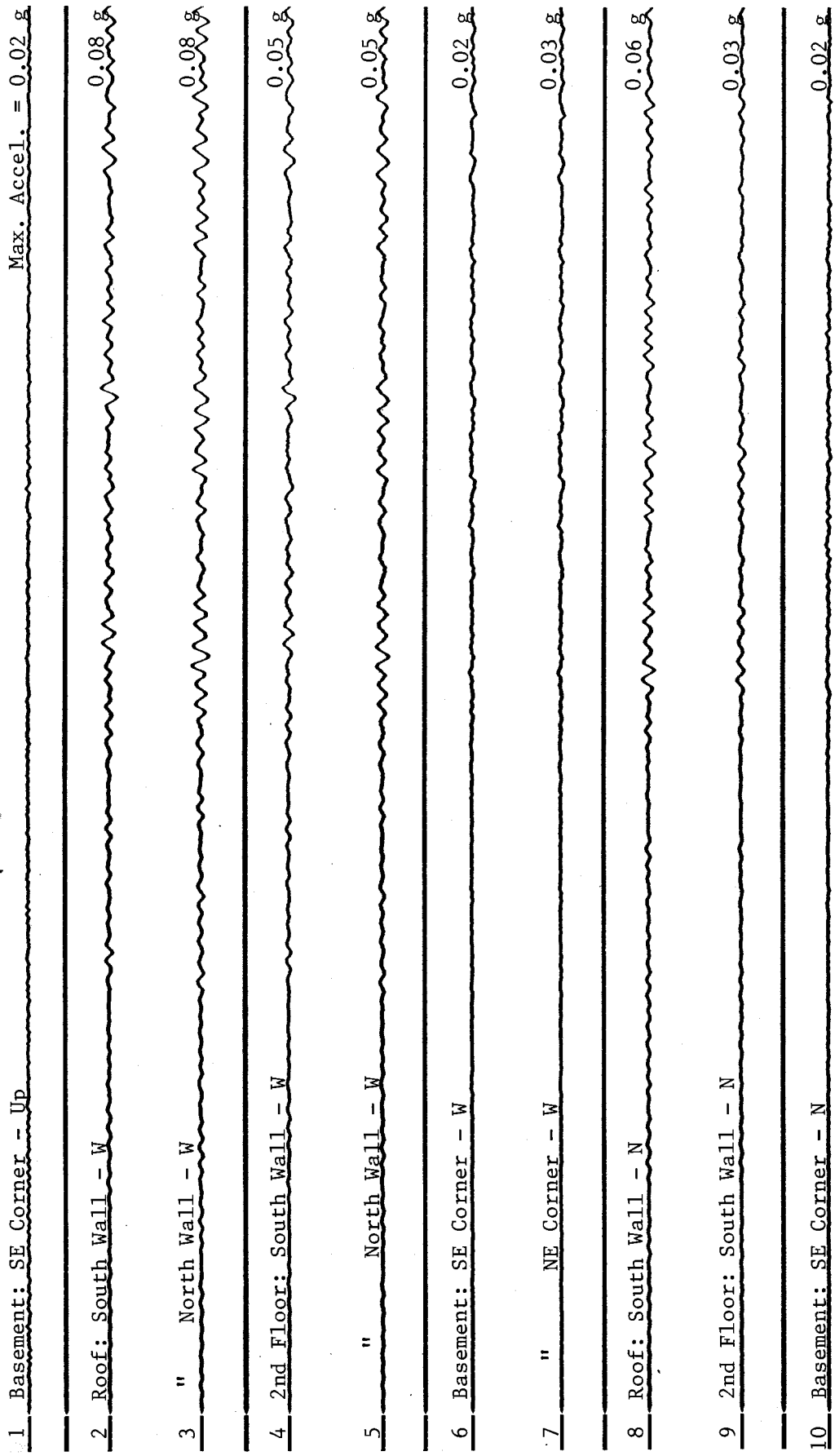
SENSOR LOCATIONS



Perimeter ductile concrete  
moment frames.  
Design date: 1971

Pomona - 2-story Commercial Bldg.

(GSMIP Station 23511) Record 23511-C0117-92185.04



Bldg. reference FF record shown on page 56.

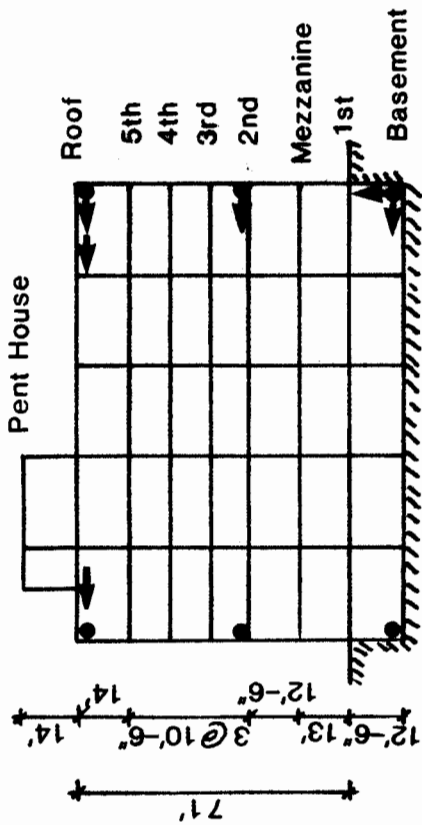
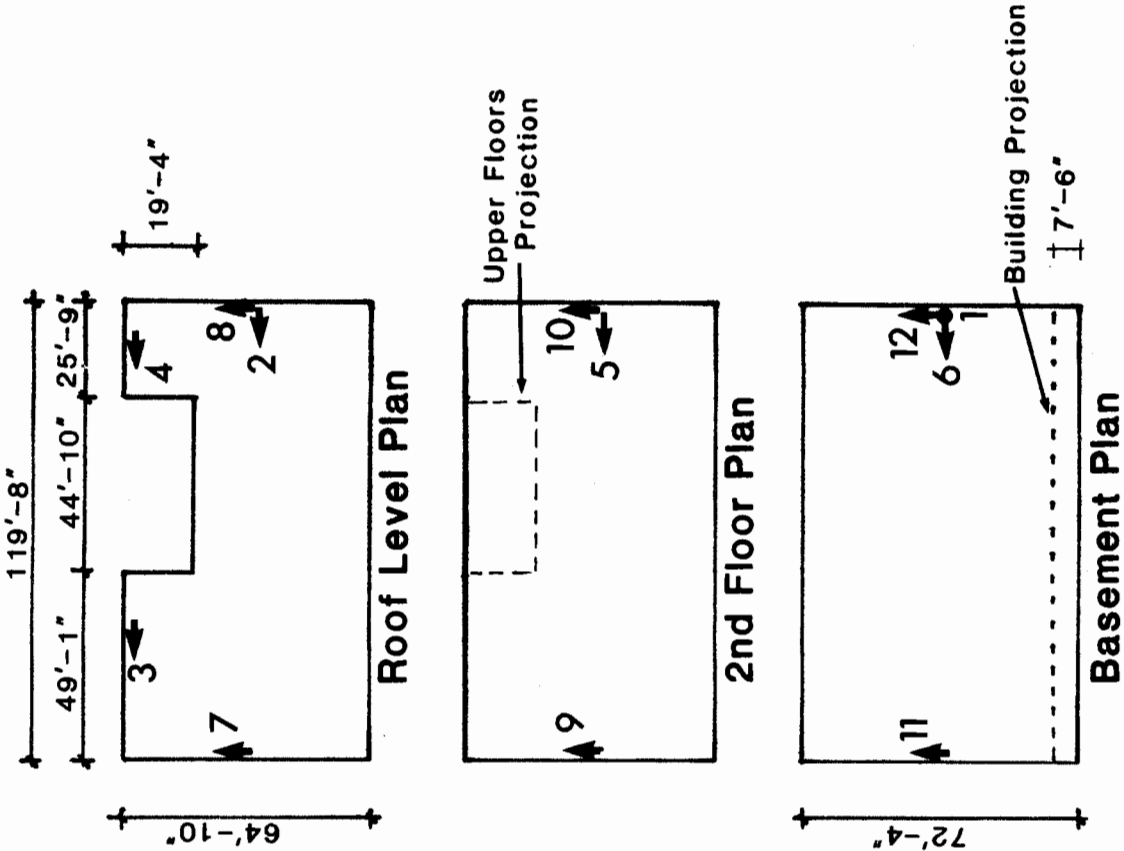
Structure Reference Orientation: N=0°



Pomona - 6-story Commercial Bldg.

(CSMIP Station No. 23544)

SENSOR LOCATIONS



S/N Elevation

Reinforced concrete frames  
with URM infill walls.  
Design date: 1923

Structure Reference  
Orientation: N= 0 °

Pomona - 6-story Commercial Bldg.  
(CSMIP Station 23544)

Record 23544-C0108-92185.04

1 Basement: Norht Wall - Up

2 Roof: Norht Wall - S

3 " West Wall of South Wing - S

4 " West Wall of North Wing - S

5 2nd Floor: North Wall - S

6 Basement: North Wall - S

7 Roof: South Wall - W

8 " North Wall - W

9 2nd Floor: South Wall - W

10 " North Wall - W

11 Basement: South Wall - W

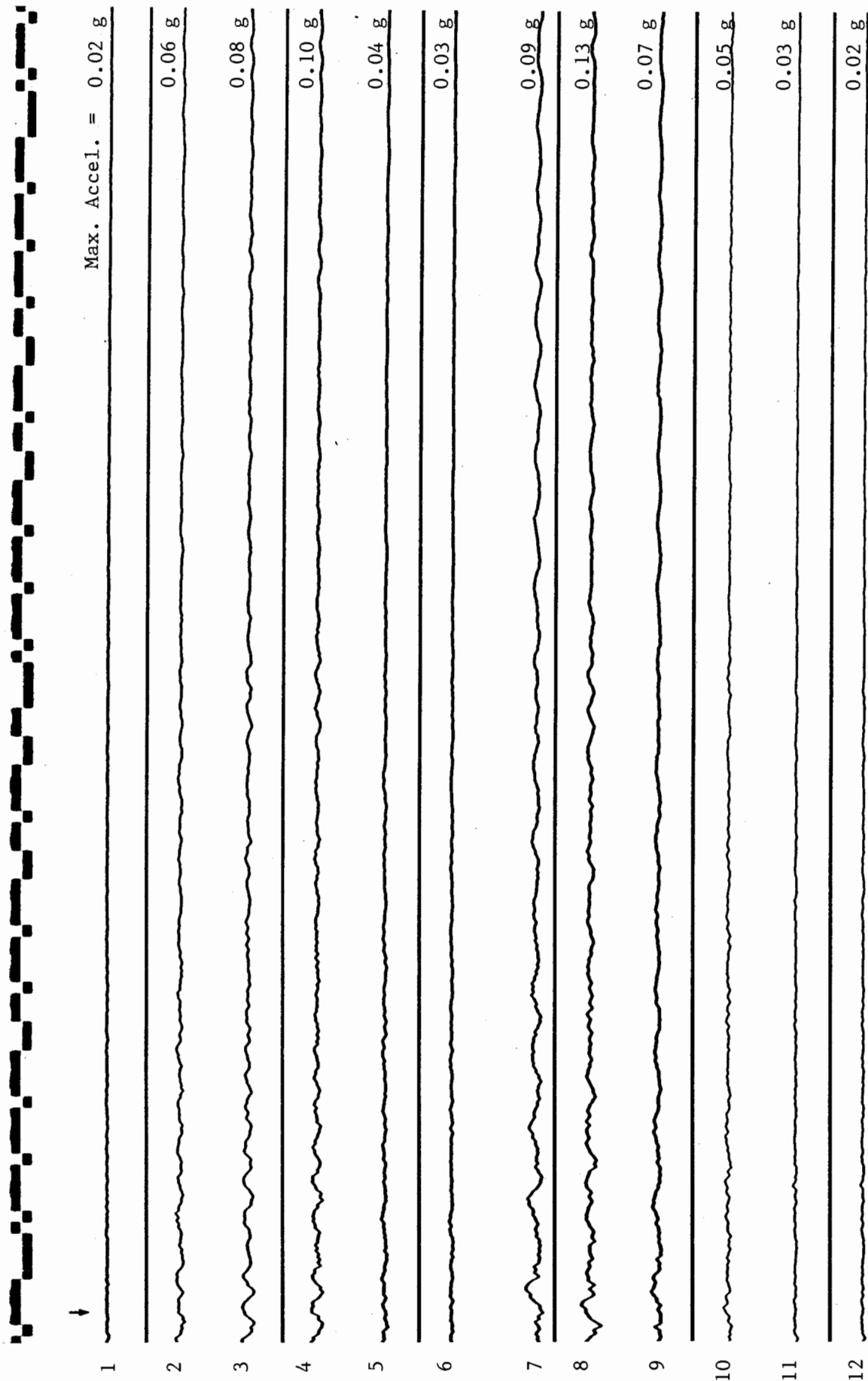
12 " North Wall - W

Structure Reference Orientation: N=0°

0 1 2 3 4 5 10 15 20 22 Sec.

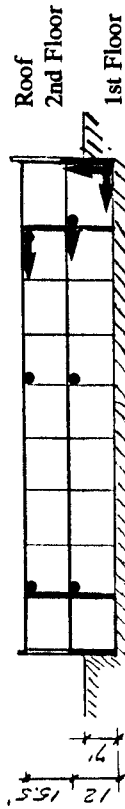
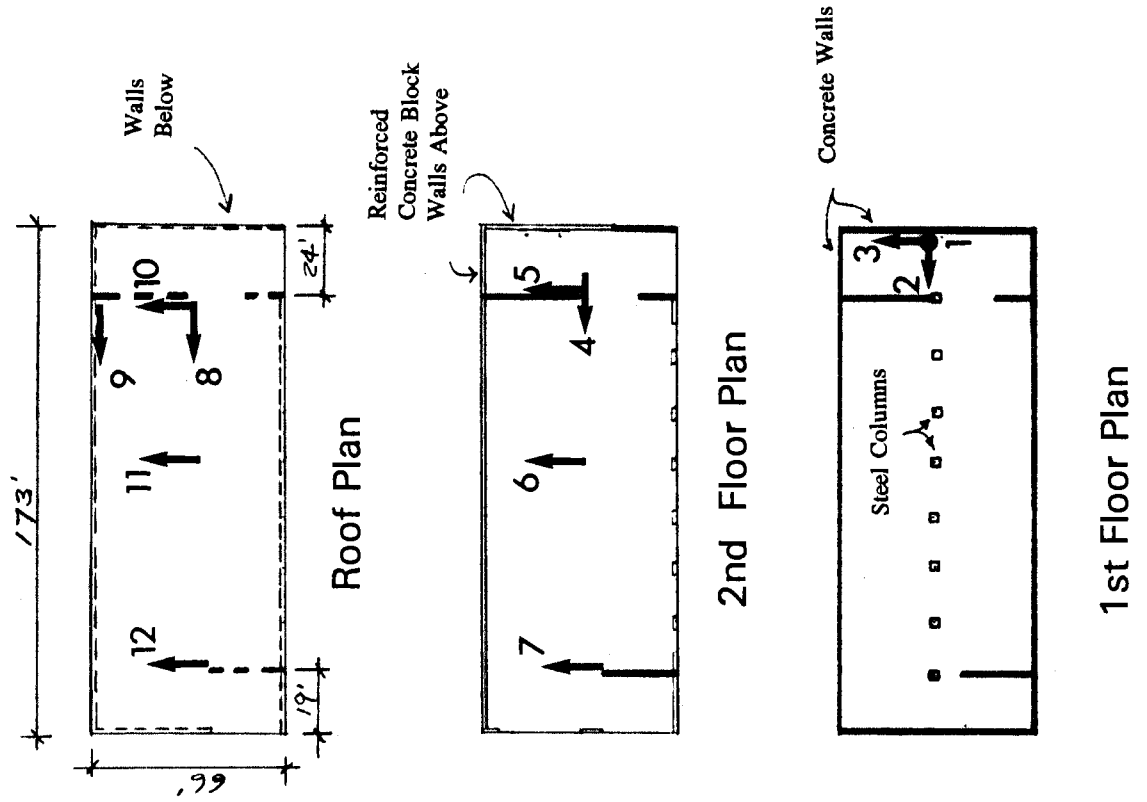
Pomona - 6-story Commercial Bldg.  
(CSMIP Station 23544)

Record 23544-C0108-92185.04



Riverside - 2-story Govt. Office Bldg.  
(CSMIP Station No. 13620)

SENSOR LOCATIONS



W/E Elevation

Concrete block walls and  
wood diaphragms.  
Design date: 1950



Structure Reference  
Orientation: N = 35°

## Riverside - 2-story Government Office Bldg.

(CSMIP Station 13620) \_\_\_\_\_ RECORD 13620-CS122-92182.10 \_\_\_\_\_

12 Roof: West Wall - N

11 Roof: Near Center - N

10 Roof: East Wall - N

7 2nd Floor: West Wall - N

6 2nd Floor: Near Center - N

5 2nd Floor: East Wall - N

9 Roof: North Wall - W

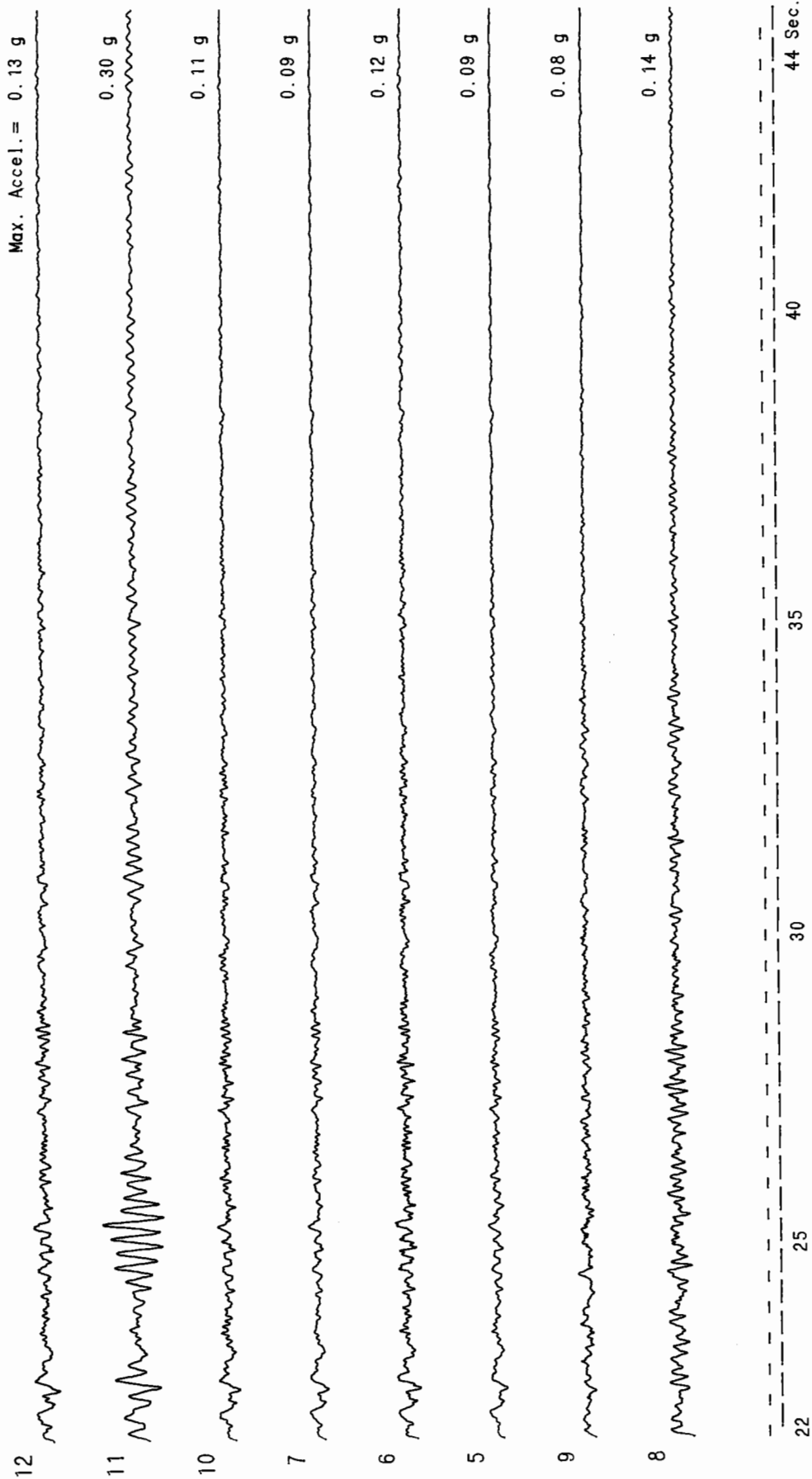
8 2nd Floor: Center - W

Structure Reference Orientation: N=35°

0 1 2 3 4 5 10 15 20 22 Sec.

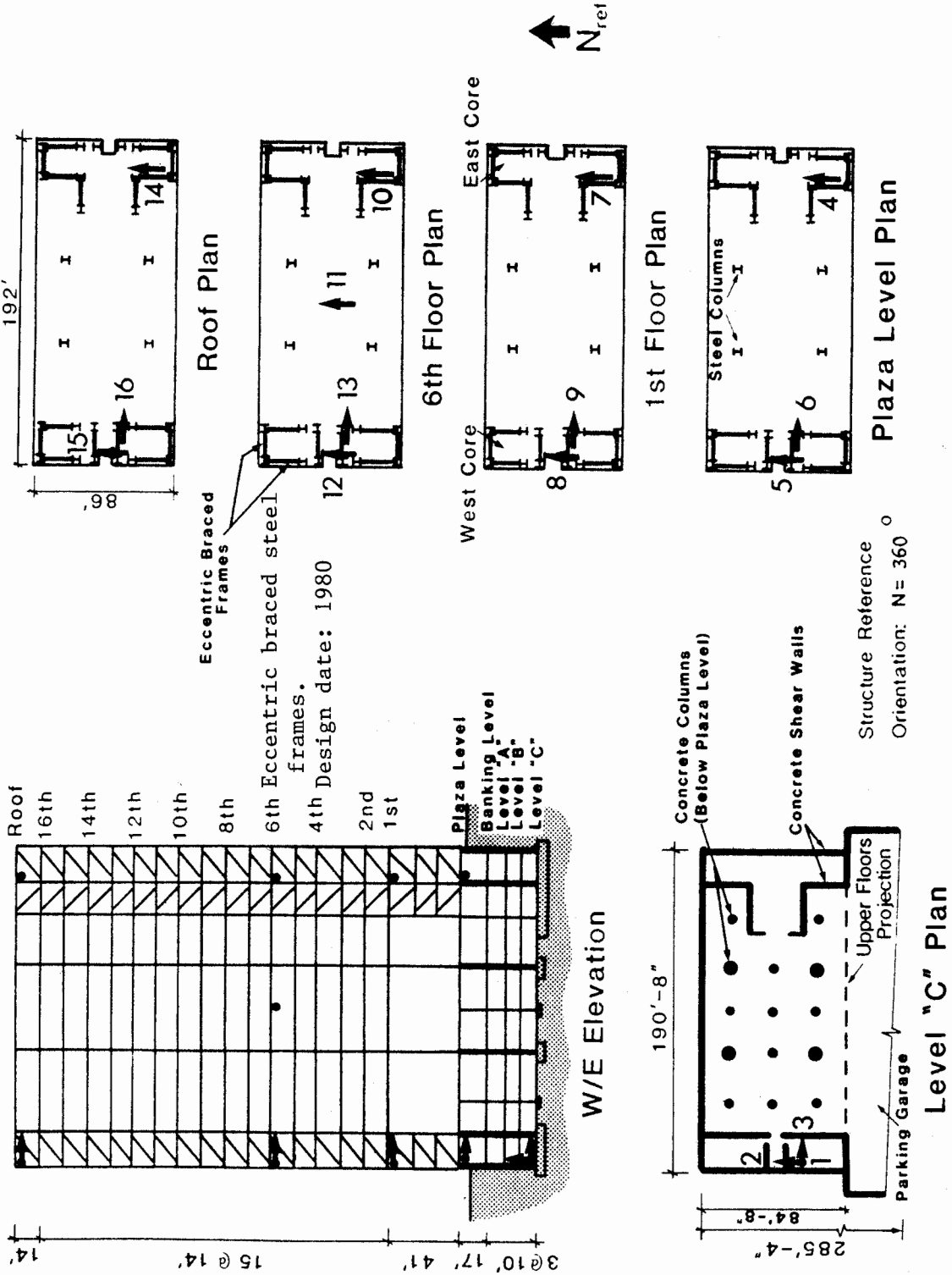
# Riverside - 2-story Government Office Bldg.

(CSMIP Station 13620) RECORD 13620-CS122-92182.10



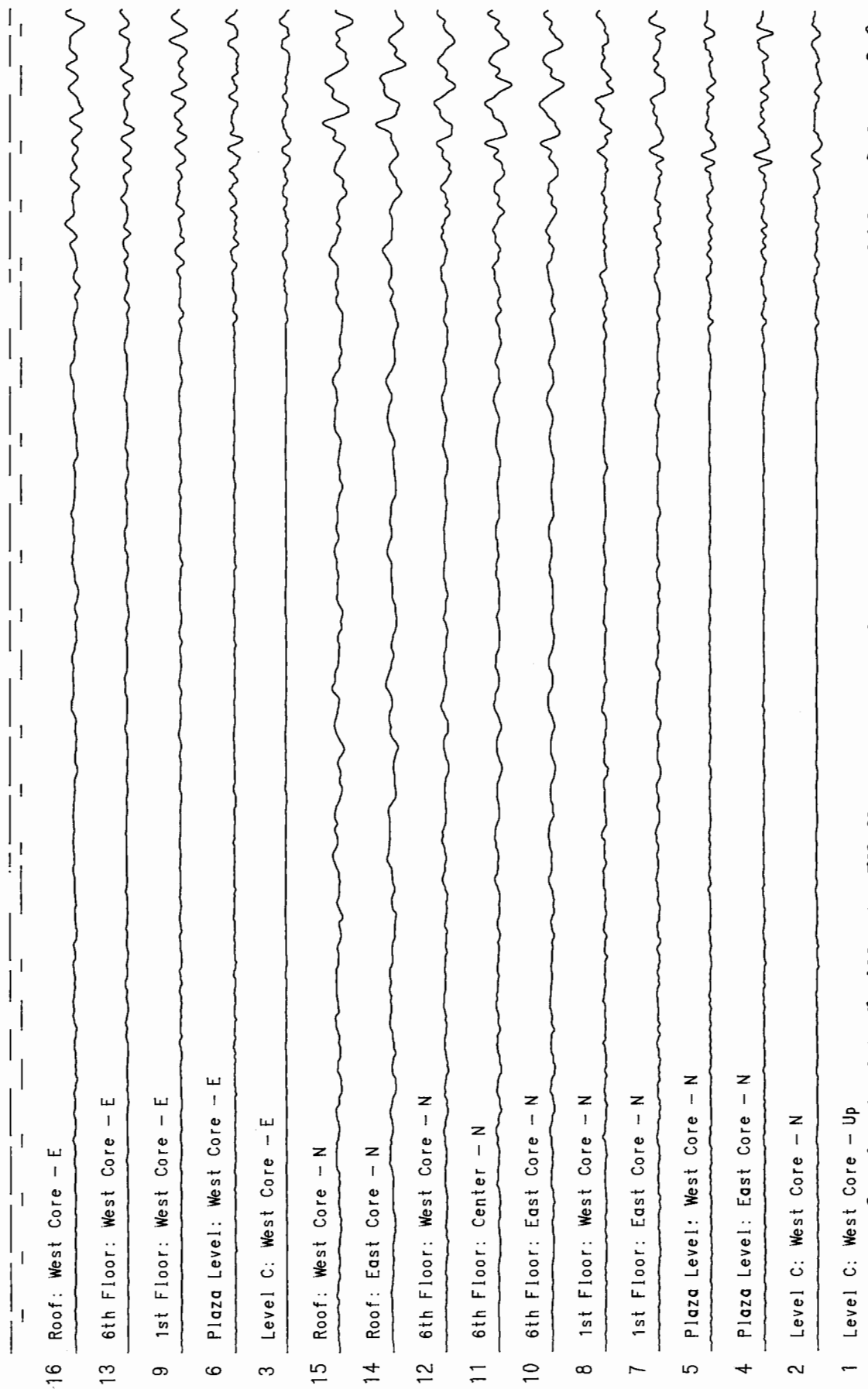
San Diego - 19-story Commercial Bldg.  
(CSMIP Station No. 03603)

SENSOR LOCATIONS

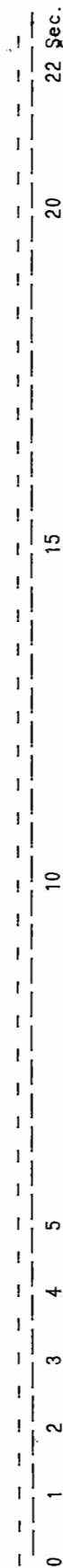


San Diego - 19-story Commercial Bldg.  
(CSMIP Station 03603)

RECORD 03603-CS114-92224.08



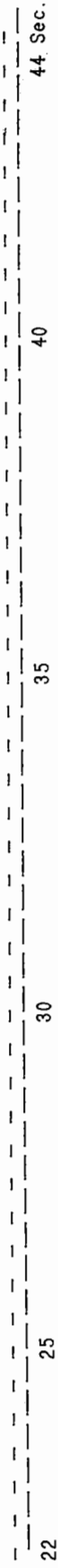
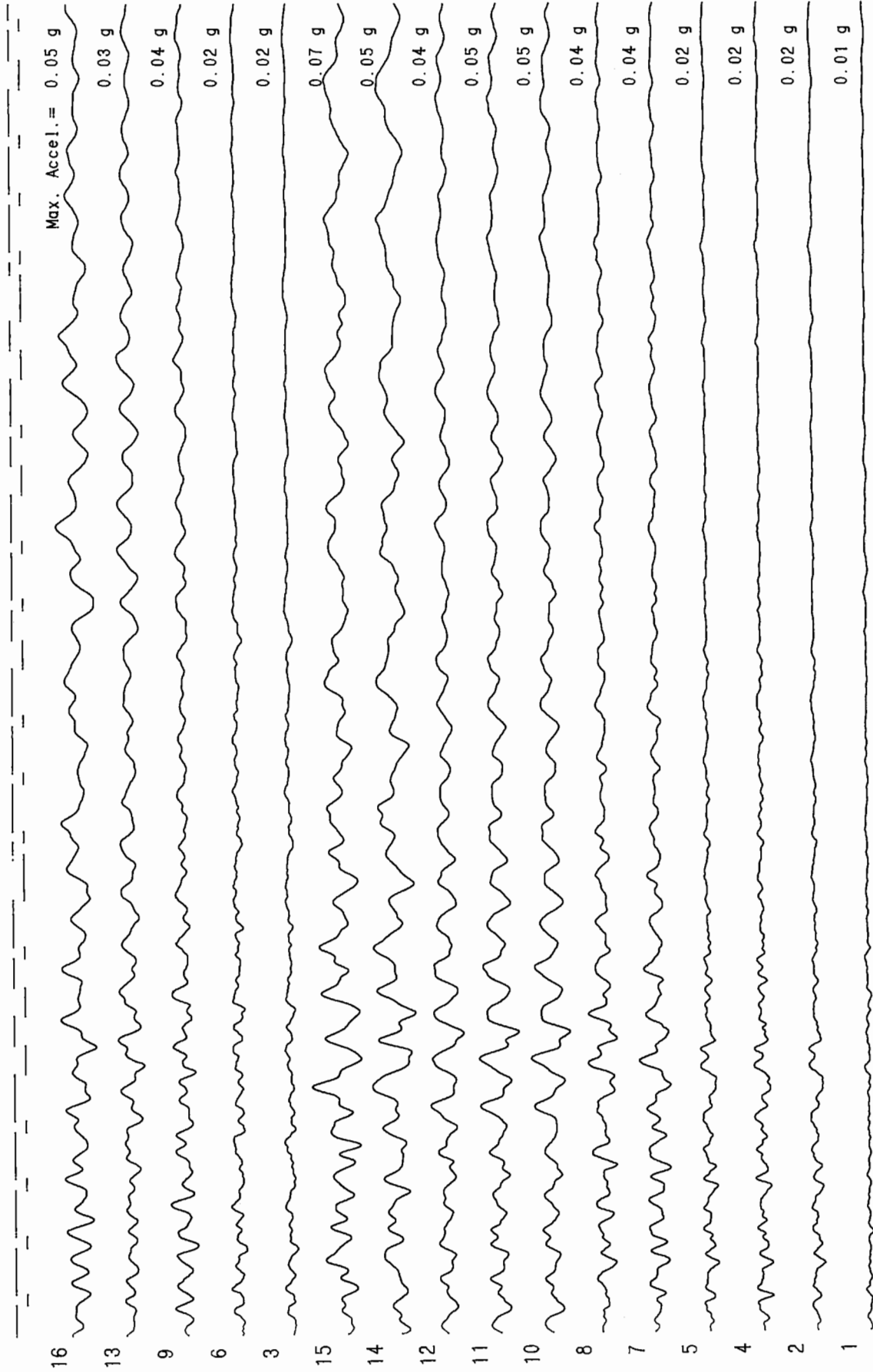
Structure Reference Orientation: N=0°



This page plotted with 4.x vertical exaggeration.

San Diego - 19-story Commercial Bldg.  
(CSMIP Station 03603)

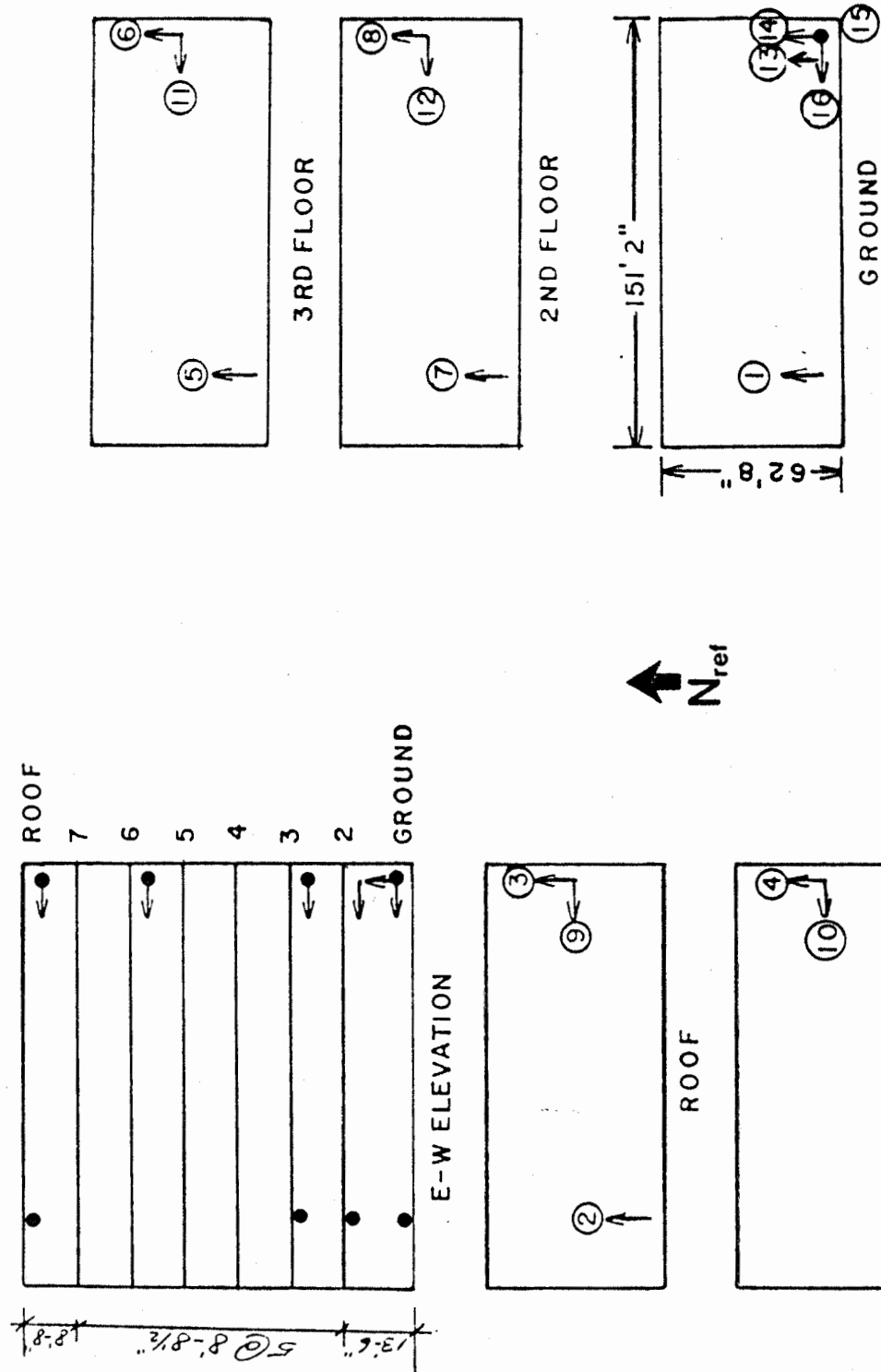
RECORD 03603-CS114-92224.08



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Van Nuys - 7-story Hotel  
(CSMIP Station No. 24386)

SENSOR LAYOUT



Moment resisting concrete frames.  
Design date: 1965

Structure Reference  
Orientation:  $N = 0^\circ$

Van Nuys - 7-story Hotel  
(CSMIP Station 24386)

Record 24386-C0198-92192.03

		Max. Accel. = 0.02 g
1	Ground Floor: Near SW Corner - N	
2	Roof: Near SW Corner - N	0.06 g
3	" East Wall - N	0.05 g
4	6th Floor: East Wall - N	0.05 g
5	3rd Floor: SW Corner - N	0.04 g
6	" East Wall - N	0.03 g
7	2nd Floor: Near SW Corner - N	0.03 g
8	" East Wall - N	0.04 g
9	Roof: East Wall - W	0.06 g
10	6th Floor: East Wall - W	0.05 g
11	3rd Floor: East Wall - W	0.04 g
12	2nd Floor: East Wall - W	0.03 g
13	Ground Floor: SE Corner - N	0.02 g

Structure Reference Orientation: N=0°

0	1	2	3	4	5	10	15	20	22 Sec.
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Van Nuys - 7-story Hotel  
(CSMIP Station 24386)

Record 24386-S3487-92192.03

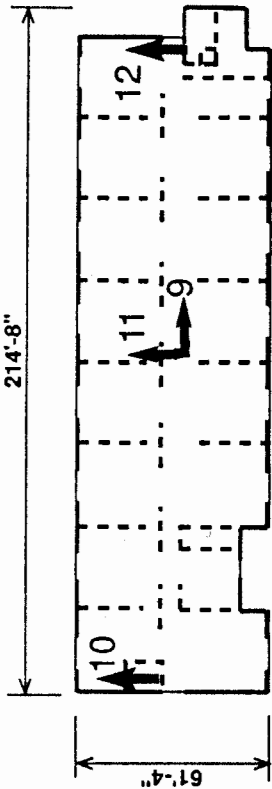
14	Ground Floor: SE Corner - N	Max. Accel. = 0.02 g
15	" " - Up	0.01 g
16	" " - W	0.03 g

Structure Reference Orientation: N=0°

0	1	2	3	4	5	10	15	20	22 Sec.
---	---	---	---	---	---	----	----	----	---------

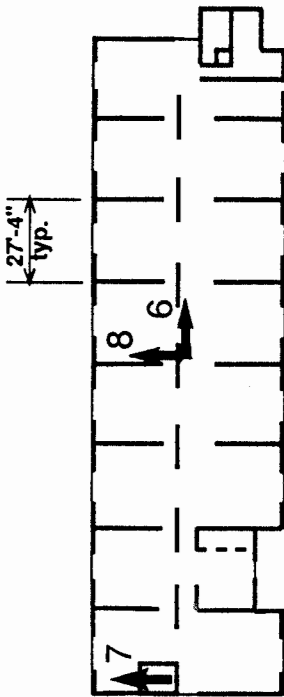
Whittier - 8-story Hotel  
(CSMIP Station No. 14606)

SENSOR LOCATIONS

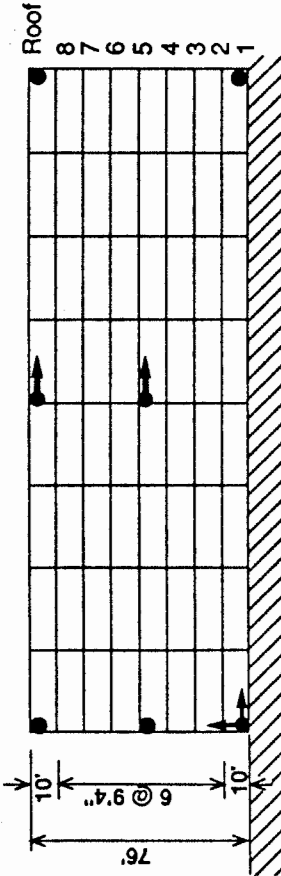
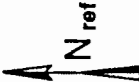


Roof Plan

Reinforced  
Block Masonry  
Shear Walls



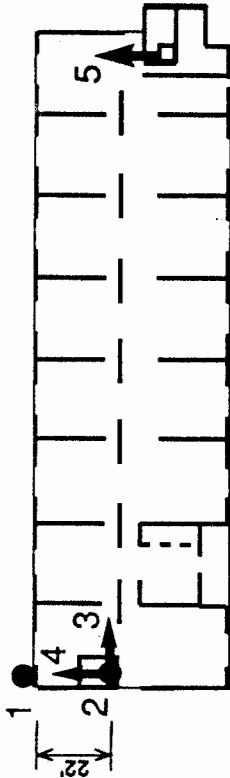
5th Floor Plan



W/E Elevation

Reinforced concrete block  
shear walls.  
Design date: 1984

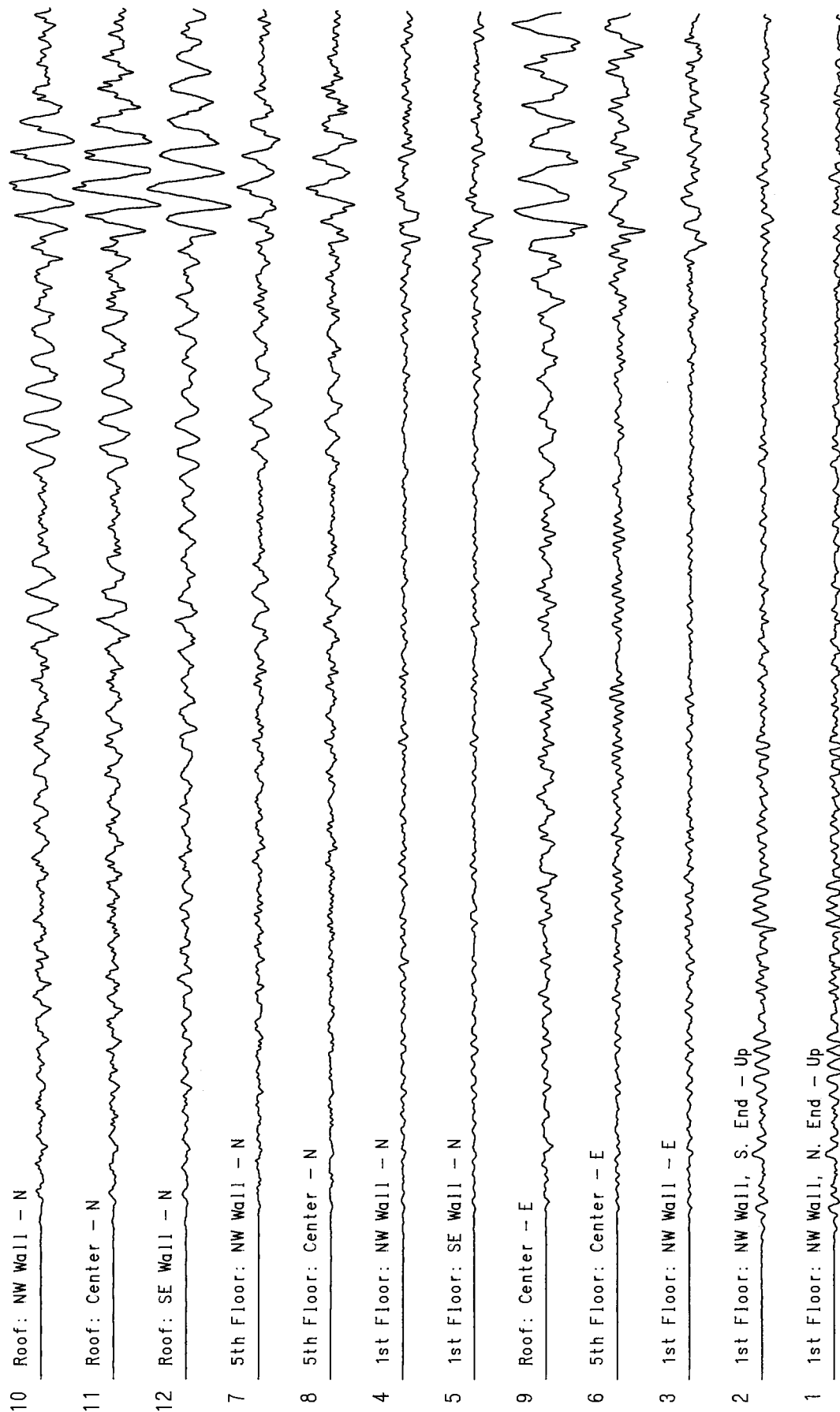
Structure Reference  
Orientation: N = 0°



1st Floor Plan

Whittier - 8-story Hotel  
(CSMIP Station 14606)

RECORD 14606-CS118-92189.09



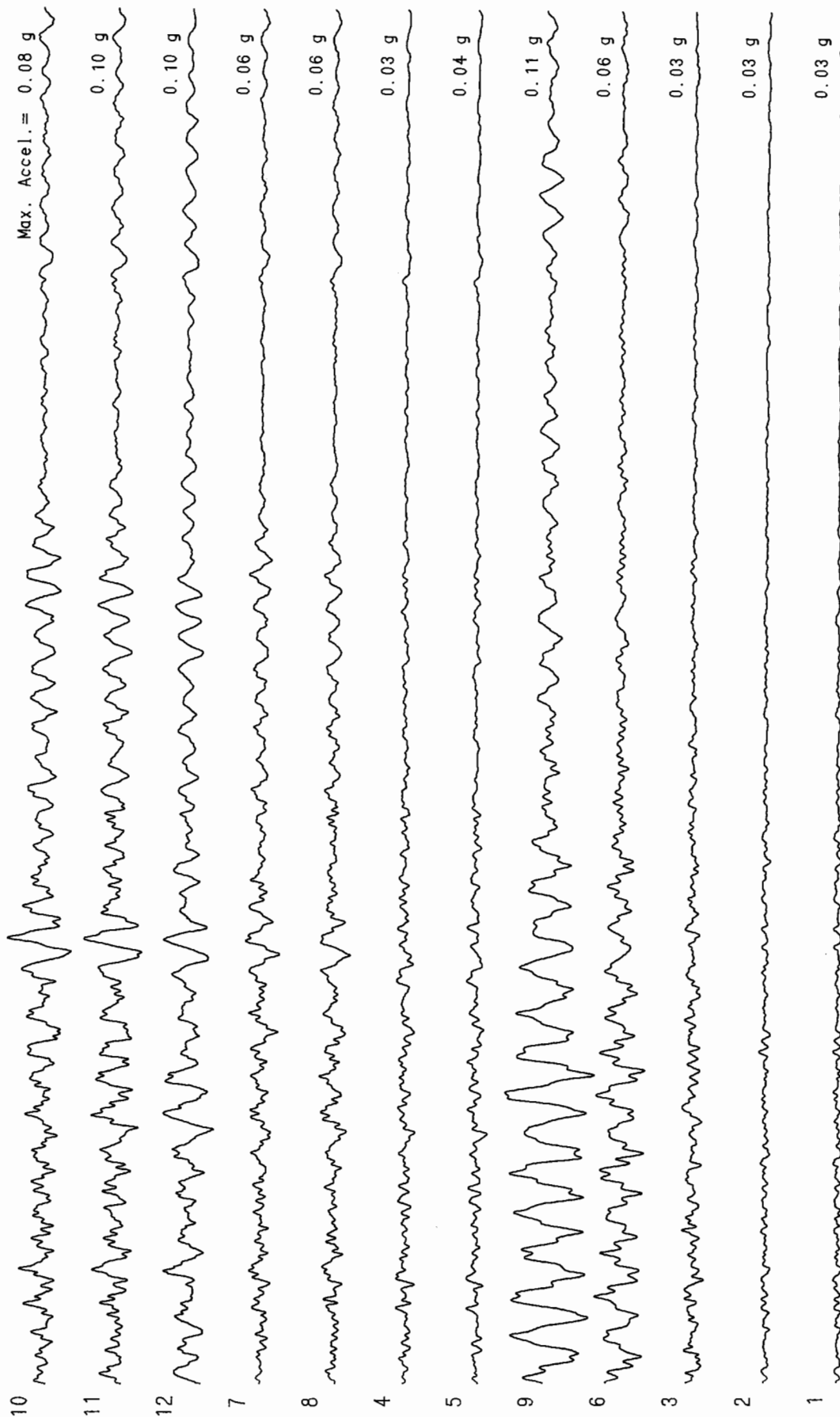
Structure Reference Orientation: N=0°

0 1 2 3 4 5 10 15 20 22 Sec.

This page plotted with 4.x vertical exaggeration.

Whittier - 8-story Hotel  
(CSMIP Station 14606)

RECORD 14606-CS118-92189.09



22 25 30 35 40 44 Sec.

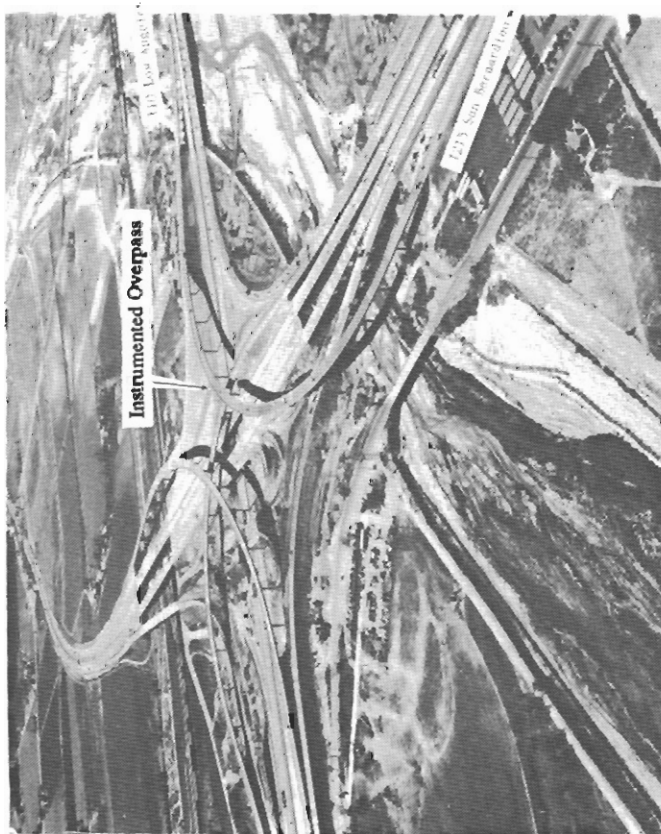
This page plotted with 4.x vertical exaggeration.

## INDEX TO LIFELINE STRUCTURE RECORDS

<u>Station</u>	<u>Page</u>
San Bernardino - I-10/215 Interchange	211
Cogswell Reservoir - Cogswell Dam	219
Lake Mathews - Main Dam . . . . .	222
Lake Mathews - Dike 1	223
Etiwanda - Power Plant	225
Lancaster - Airport Control Tower . . . . .	227



**San Bernardino - I10/215 Interchange**  
(CSMIP Station No. 23631)



View of Bents 4, 5 and 6

No. of Spans: 16

Total Length: 2540' ±

Width of Deck: 41'

Plan Shape: Curved

Design Date: 1969

Construction Date: 1973

Note: In 1991, the bridge was retrofitted by adding 3/8" steel casing to columns, replacing restrainers at hinges, retrofitting footings and abutments.

**Superstructure Type:**

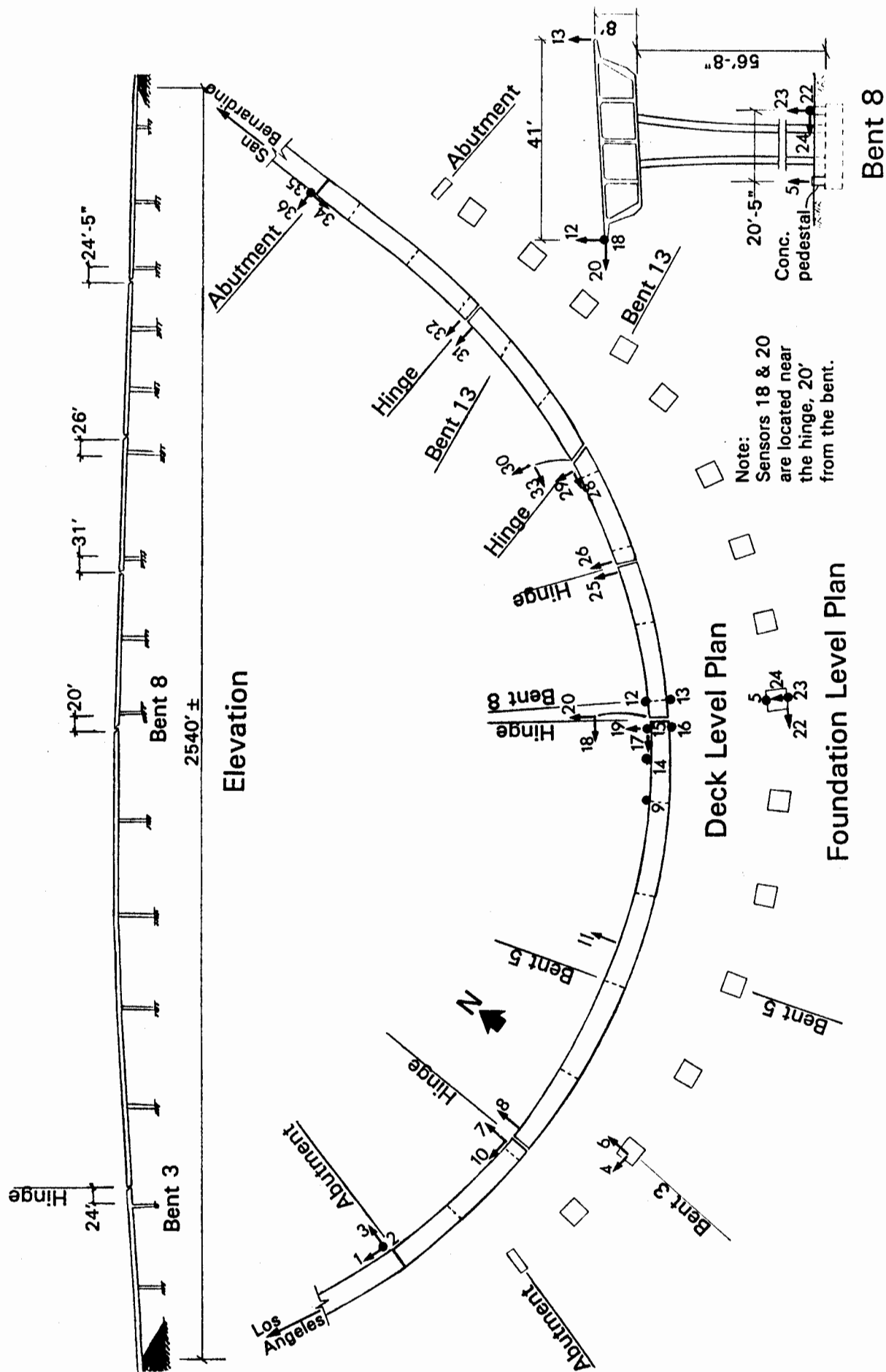
Multi-cell prestressed concrete box girders; six structures connected by hinges with cable restrainers.

**Substructure Type:**

Total of 15 single concrete columns, 8'x5.5' octagonal section; column height varies from 38 to 89 feet.

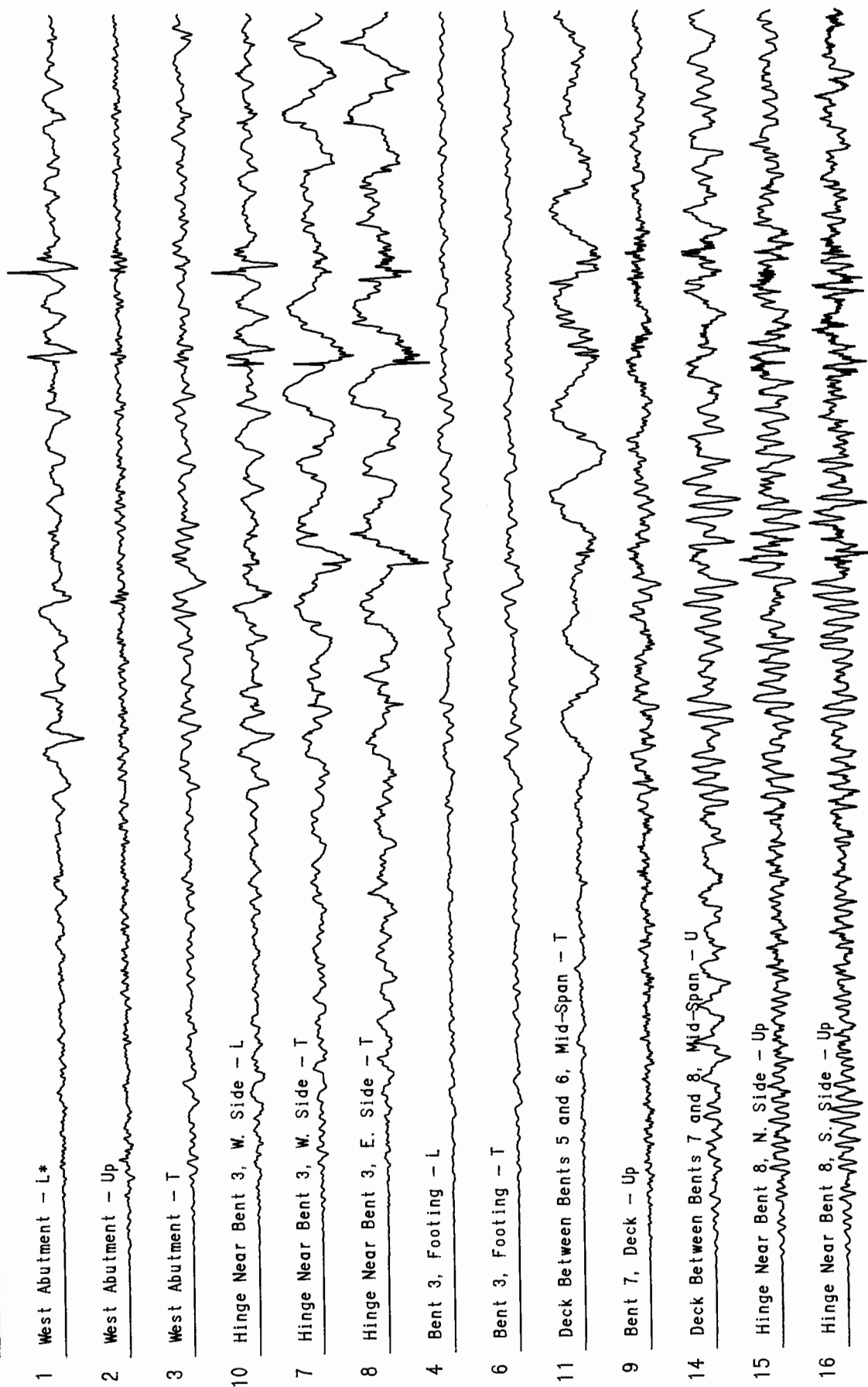
**Foundation Type:**

Spread footings supported by concrete piles.



San Bernardino - I10/215 Interchange  
(CSMIP Station 23631)

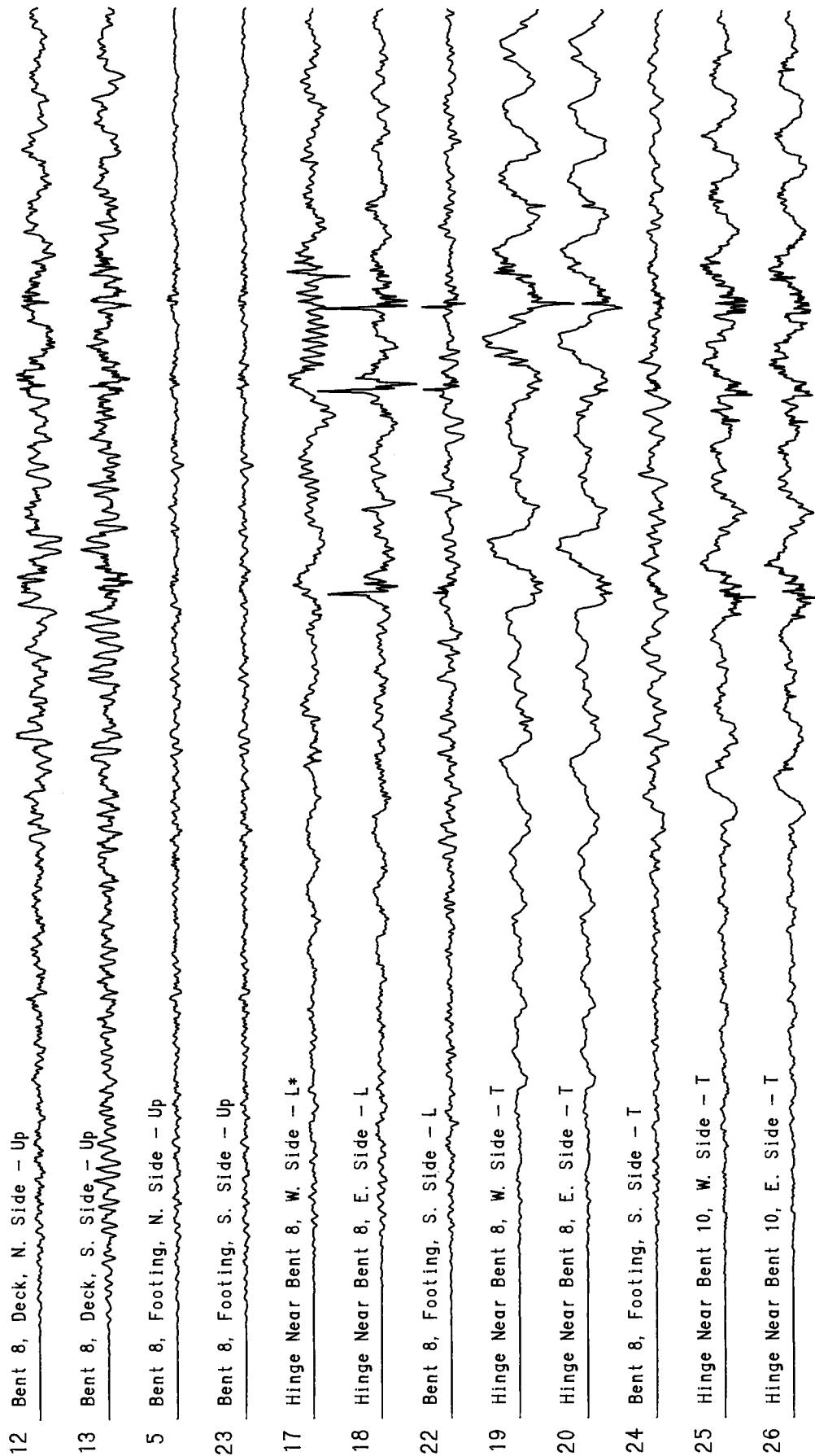
RECORD 23631-CS117-92180.09



0 1 2 3 4 5 10 15 20 22 Sec.

San Bernardino - I10/215 Interchange  
(CSMIP Station 23631)

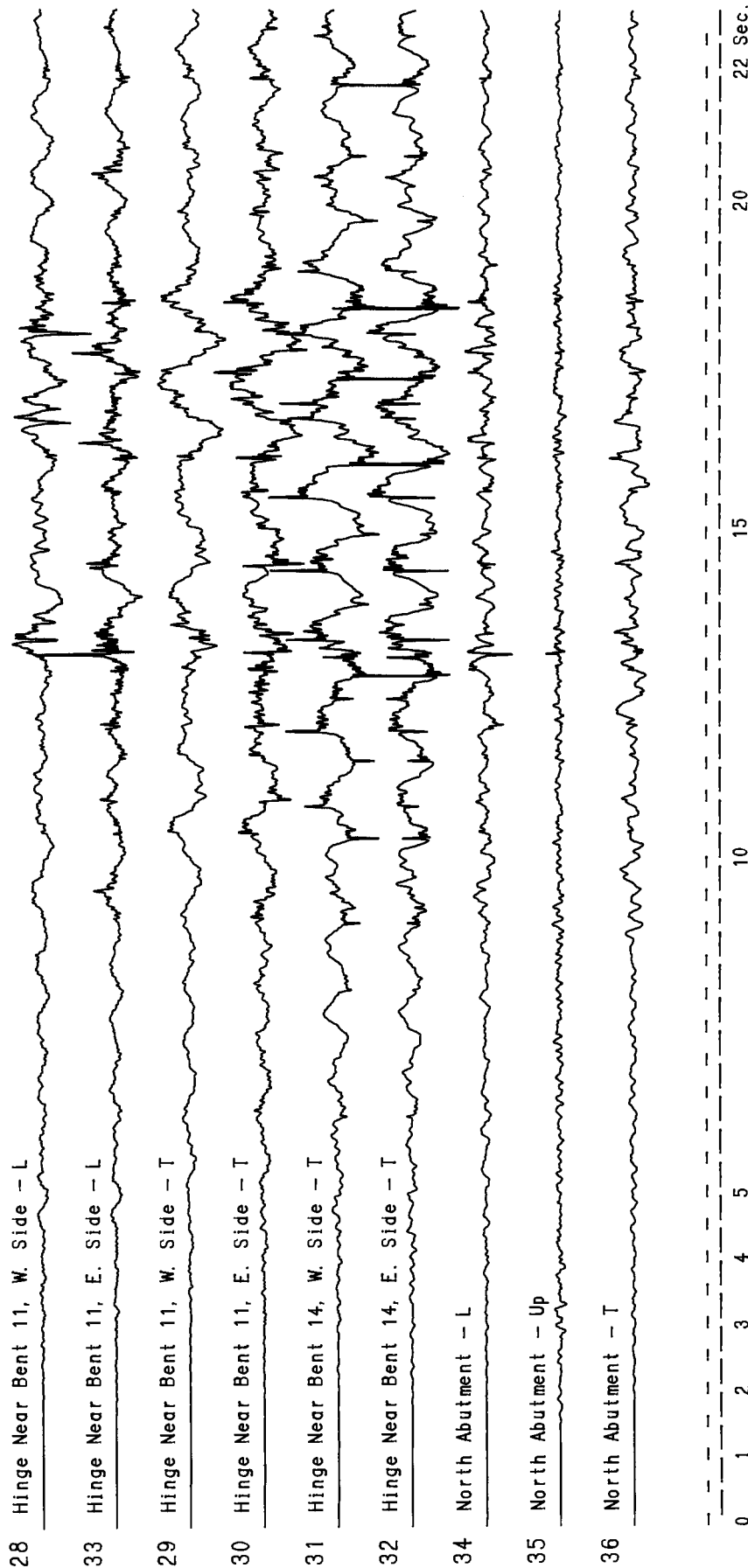
RECORD 23631-CS117-92180.09



0 1 2 3 4 5 10 15 20 22 Sec.

San Bernardino - I10/215 Interchange  
(CSMIP Station 23631)

RECORD 23631-CS117-92180.09

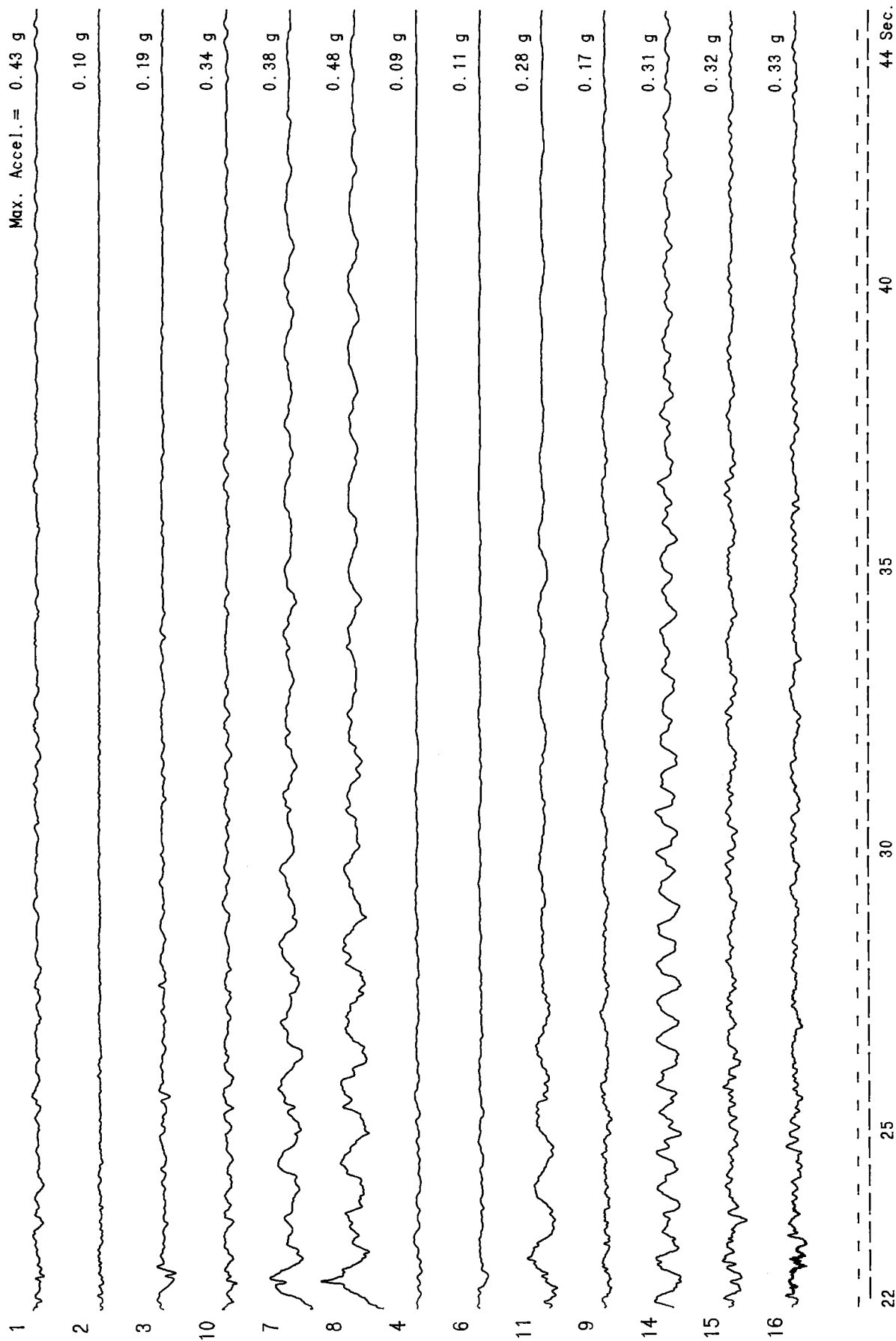


Bridge reference FF record shown on page 62.

\* L - parallel to bridge, T - transverse to bridge.

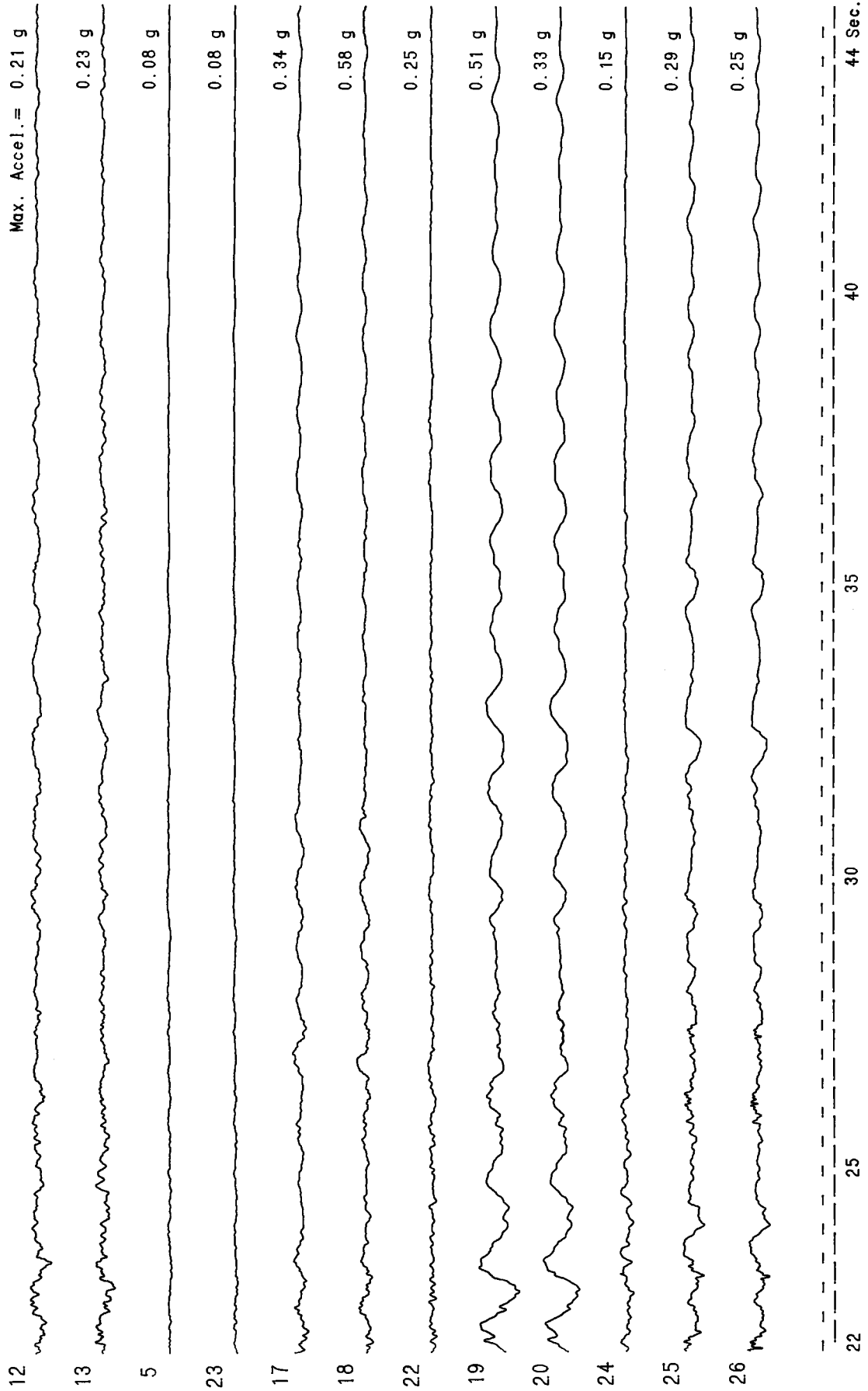
San Bernardino - I10/215 Interchange  
(CSMIP Station 23631)

RECORD 23631-CS117-92180.09



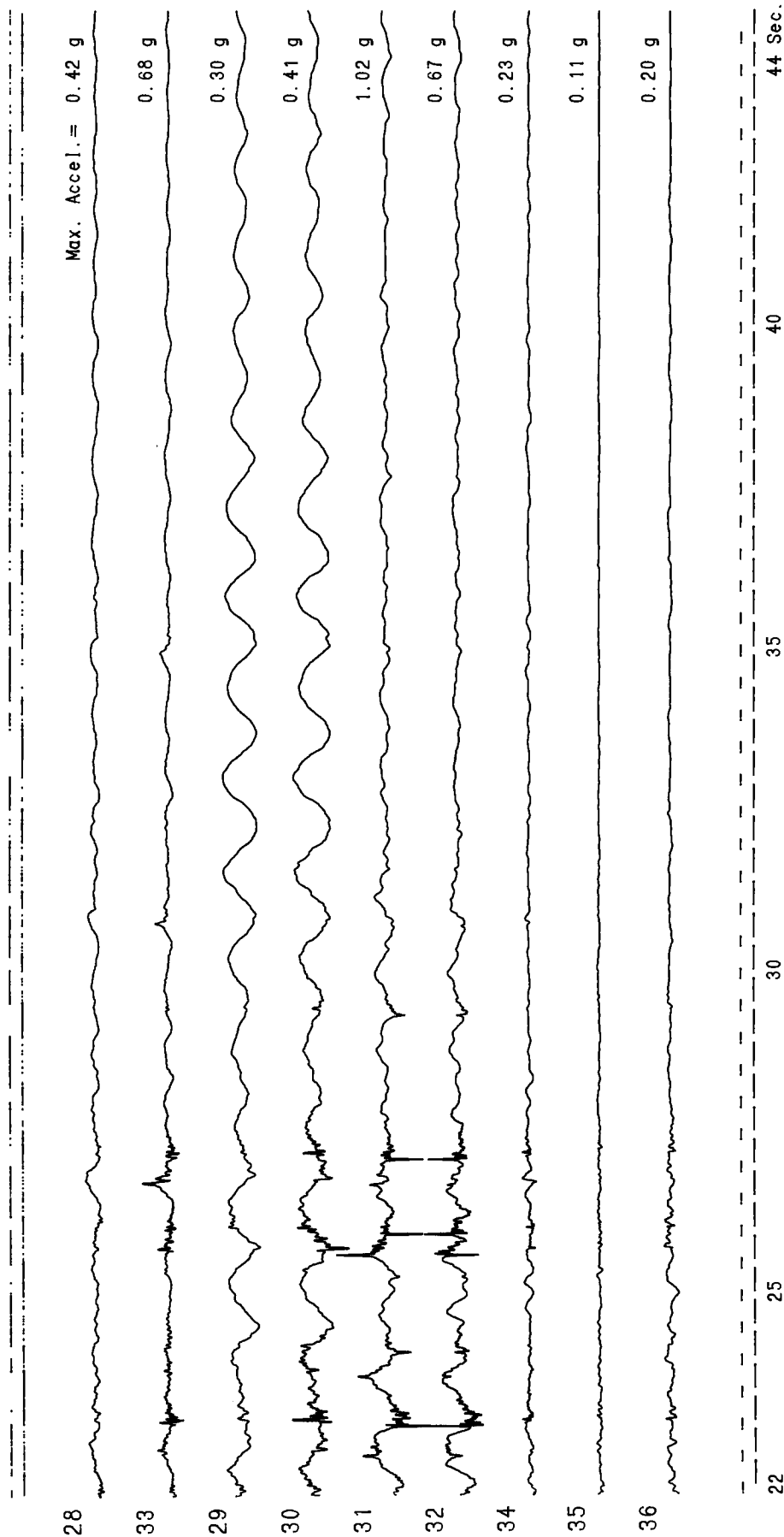
San Bernardino - I10/215 Interchange  
(CSMIP Station 23631)

RECORD 23631-CS117-92180.09



San Bernardino - I10/215 Interchange  
(CSMIP Station 23631)

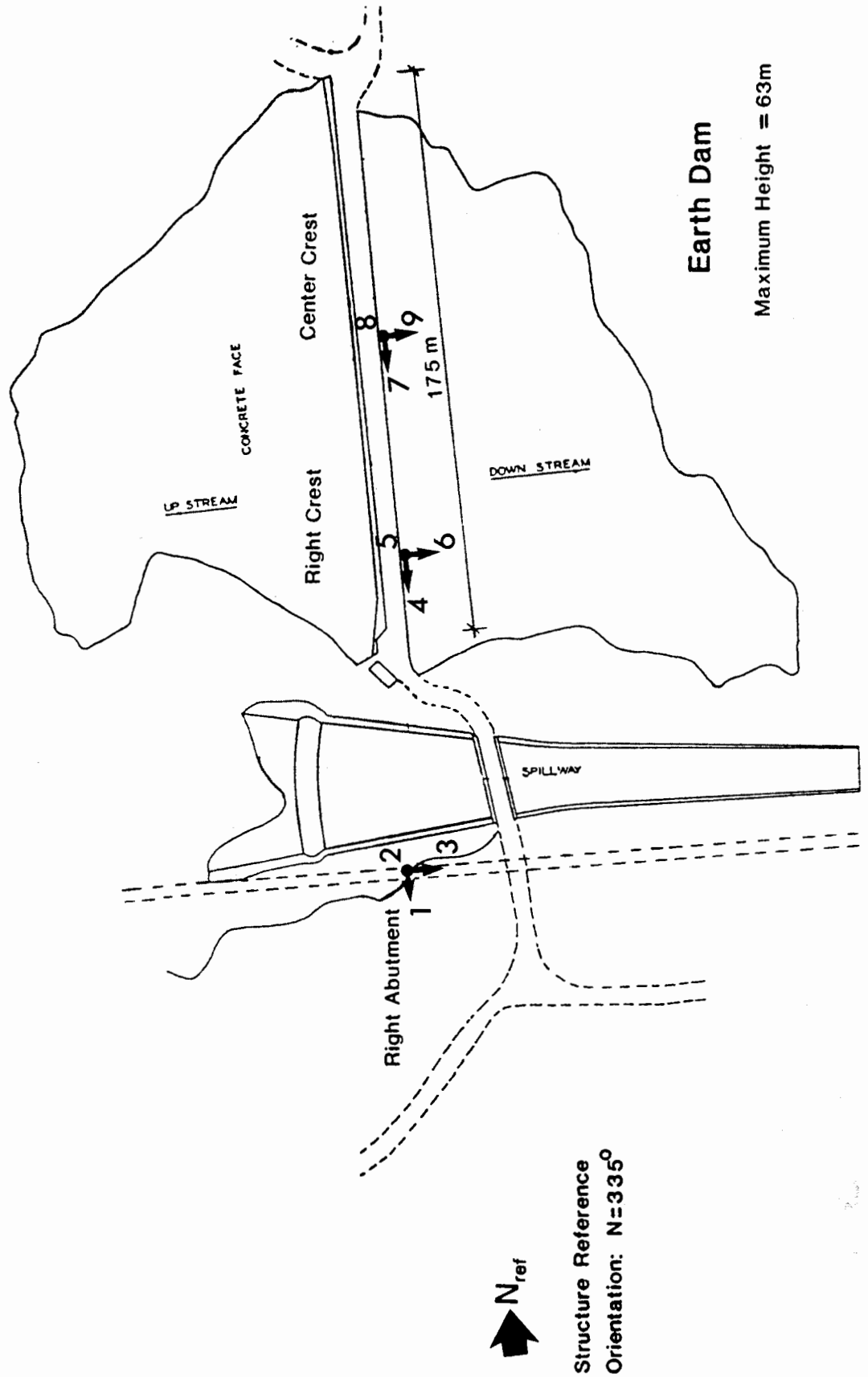
RECORD 23631-CS117-92180.09



# Cogswell Reservoir – Cogswell Dam

(CSMIP Station No. 23210)

## SENSOR LOCATIONS

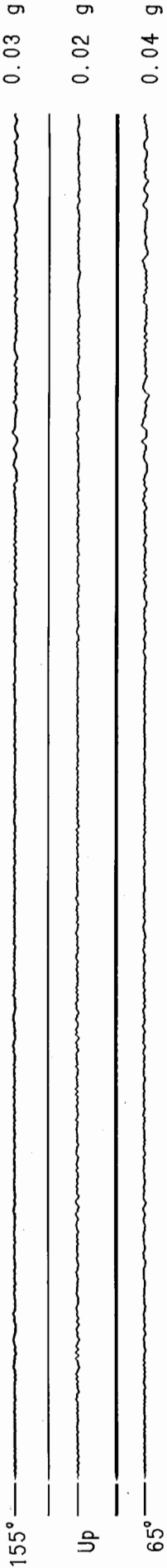


Cogswell Dam  
(CSMIP Station 23210)

Record 23210-S1867-92191.05

Max.  
Accel.

Right Abutment



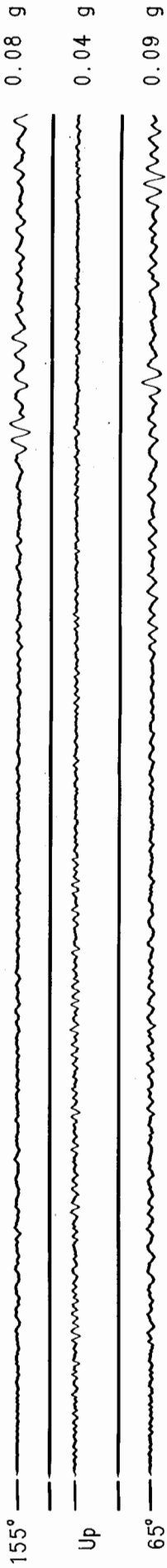
20 Sec.

Cogswell Dam  
(CSMIP Station 23210)

Record 23210-S1680-92191.05

Max.  
Accel.

Right Crest



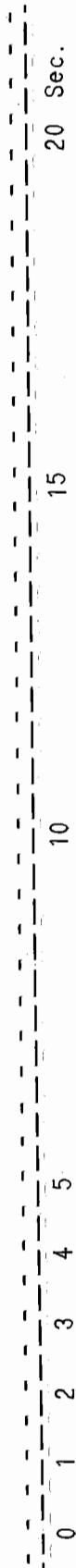
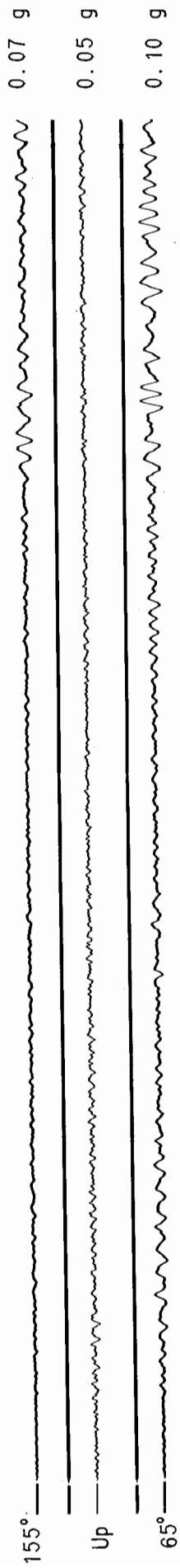
20 Sec.

Cogswell Dam  
(CSMIP Station 23210)

Record 23210-S1713-92191.05

Max.  
Accel.

Center Crest



Lake Mathews - Main Dam  
(CSMIP Station 13313)

Record 13313-S1578-92190.04

Max.  
Accel.

Right Crest

0.09 g

0.05 g

0.08 g

350°

Up

260°

20 Sec.

Lake Mathews - Main Dam  
(CSMIP Station 13313)

Record 13313-S2566-92190.04

Max.  
Accel.

Left Crest

0.07 g

0.05 g

0.07 g

350°

Up

260°

20 Sec.

Lake Mathews - Dike 1  
(CSMIP Station 13326)

Record 13326-R0470-92190.04

Max.  
Accel.



Left Abutment

75° ————— 0.07 g

Up ————— 0.05 g

345° ————— 0.07 g



20 Sec.

Lake Mathews - Dike 1  
(CSMIP Station 13326)

Record 13326-S2565-92190.04

Max.  
Accel.

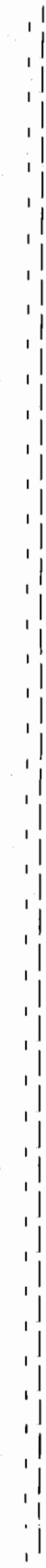


Left Crest

75° ————— 0.10 g

Up ————— 0.06 g

345° ————— 0.10 g



20 Sec.

Lake Mathews - Dike 1  
(CSMIP Station 13326)

Record 13326-R0493-92190.04

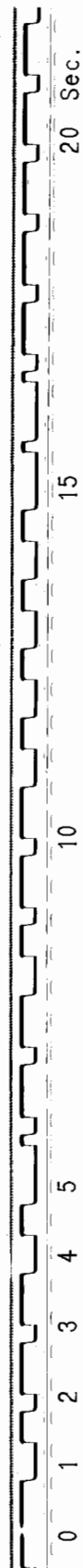
Max.  
Accel.

Center Crest

75° ————— 0.09 g

Up ————— 0.05 g

345° ————— 0.11 g

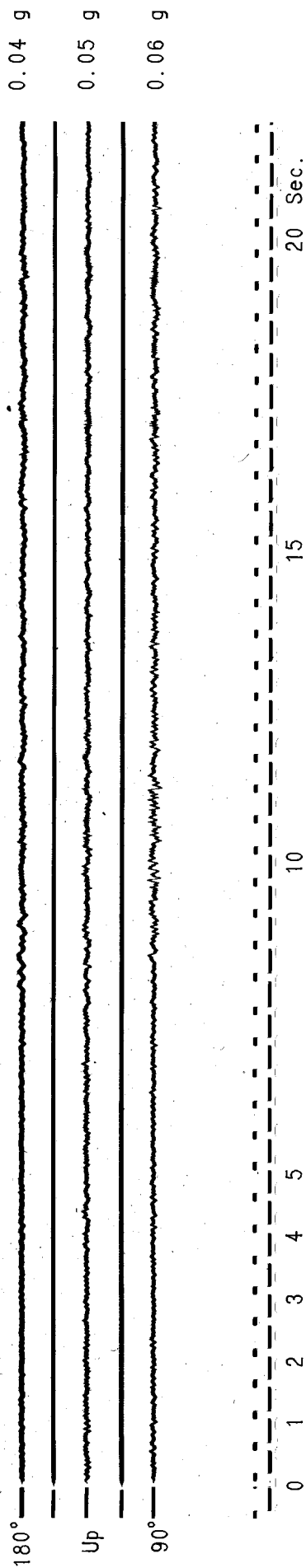


# Etiwanda - Power Plant (CSMIP Station 23466)

Record 23466-S3500-92182.03

Max.  
Accel.

## 2nd Floor of Boiler Frame

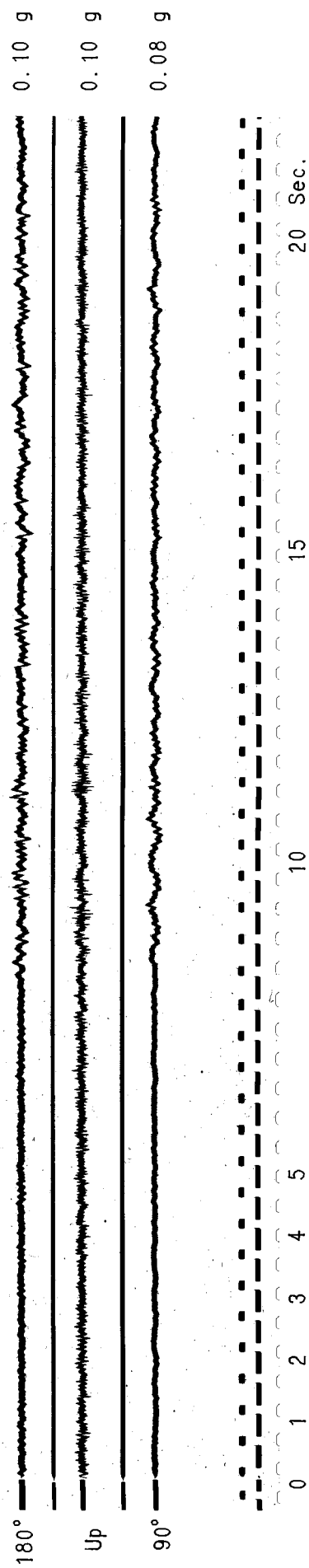


# Etiwanda - Power Plant (CSMIP Station 23466)

Record 23466-S3499-92182.03

Max.  
Accel.

## Top of Boiler Frame

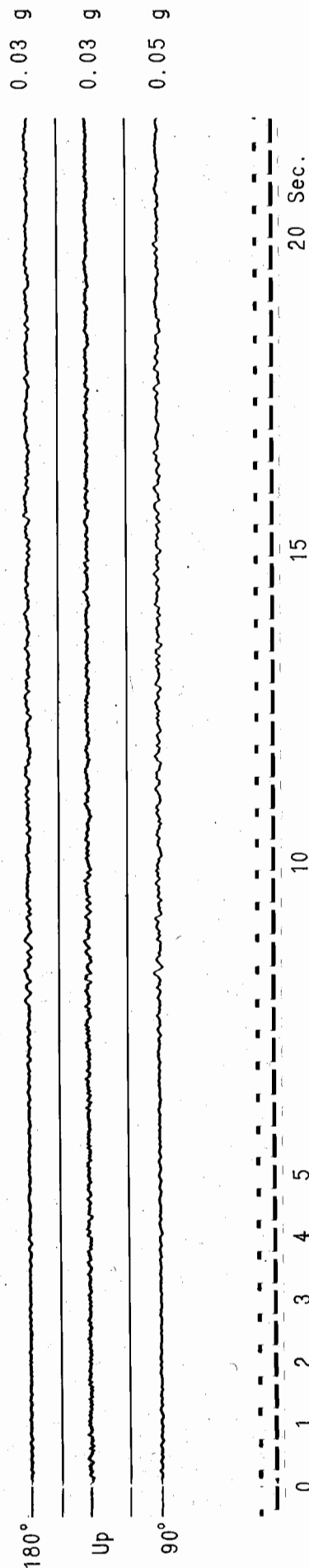


Etiwanda - Power Plant  
(CSMIP Station 23466)

Record 23466-S3494-92182.03

Max.  
Accel.

Ground Floor of Control Bldg.

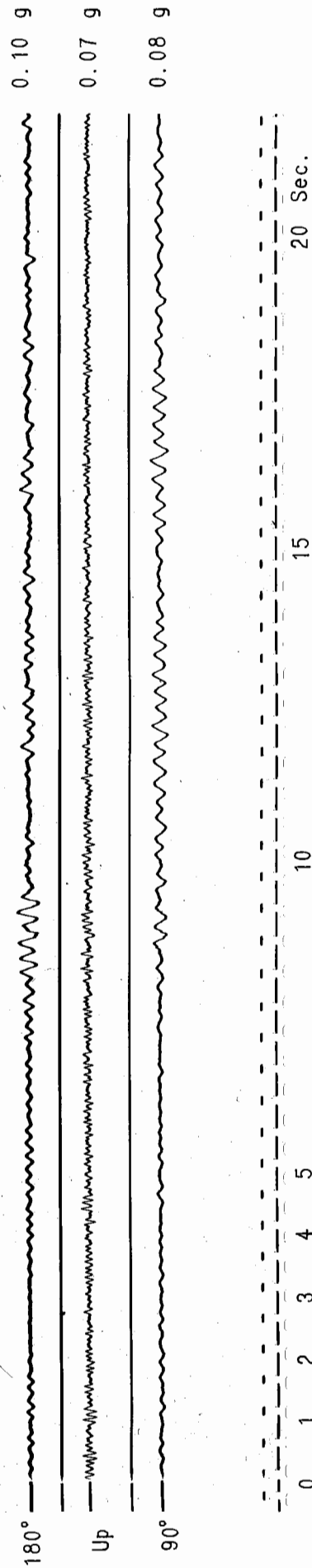


Etiwanda - Power Plant  
(CSMIP Station 23466)

Record 23466-S3497-92183.03

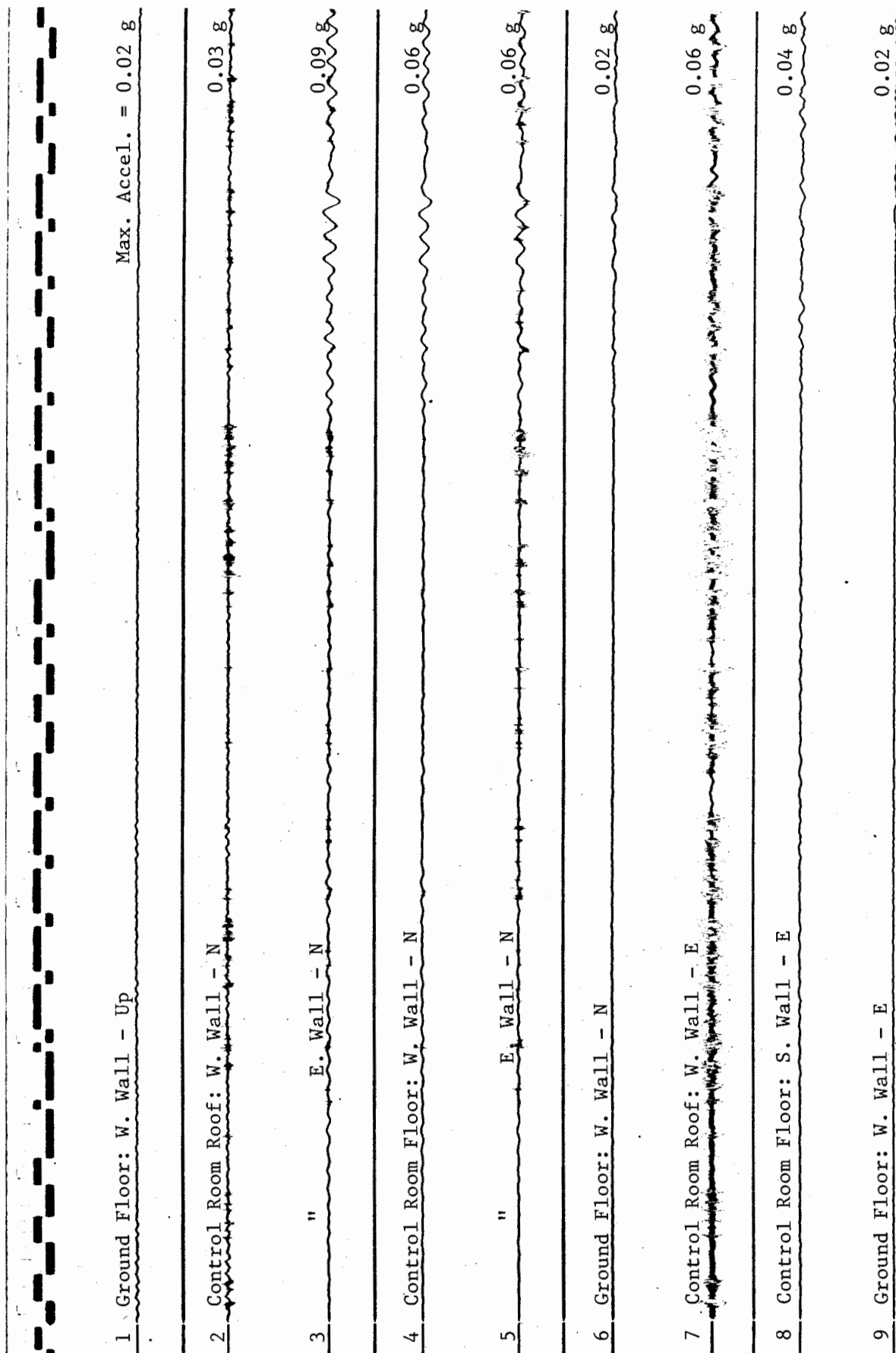
Max.  
Accel.

2nd Floor of Control Bldg.



Lancaster - Airport Control Tower  
(CSMIP Station 24474)

Record 24474-C0116-92181.03



Structure Reference Orientation: N=330°





## LIST OF CSMIP REPORTS AND DATA TAPES

California Department of Conservation  
 Division of Mines and Geology  
 Office of Strong Motion Studies  
 California Strong Motion Instrumentation Program (CSMIP)

## AVAILABLE REPORTS:

<u>Title</u>	<u>Number</u>
<b>I. Earthquake Data Reports:</b>	
CSMIP Strong-Motion Records from the Landers, California Earthquakes of June 28, 1992	OSMS 92-09
CSMIP Strong-Motion Records from the Petrolia, California Earthquakes of April 25-26, 1992	OSMS 92-05
Quick Report on CSMIP Strong-Motion Records from the April 22, 1992 Desert Hot Springs, California Earthquake	OSMS 92-03
Summary of CSMIP Strong-Motion Records for the August 17, 1991 Earthquake near Petrolia, California	OSMS 91-09
CSMIP Strong-Motion Records from the Sierra Madre, California Earthquake of 28 June 1991	OSMS 91-03
Quick Report on CSMIP Strong-Motion Records for the February 28, 1990 Earthquake near Upland, California	OSMS 90-02
CSMIP Strong-Motion Records from the Santa Cruz Mountains (Loma Prieta), California Earthquake of 17 October 1989	OSMS 89-06
CSMIP Strong-Motion Records from the Superstition Hills, Imperial County, California Earthquakes of 23 and 24 November 1987	OSMS 87-06
CSMIP Strong-Motion Records from the Whittier, California Earthquake of 1 October 1987	OSMS 87-05
CSMIP Strong-Motion Records from the Chalfant Valley, California Earthquakes of July and August 1986	OSMS 86-06
CSMIP Strong-Motion Records from the Palm Springs, California Earthquake of 8 July 1986	OSMS 86-05
Selected Accelerograms from the Redlands, California Earthquake of October 2, 1985	OSMS 85-02
CSMIP Strong-Motion Records from the Bishop, California Earthquake of 23 November 1984	OSMS 84-12

<u>Title</u>	<u>Number</u>
CDMG Strong-Motion Records from the Morgan Hill, California Earthquake of 24 April 1984	OSMS 84-7
Preliminary Summary of CDMG Strong-Motion Records from the 2 May 1983 Coalinga, California Earthquake	OSMS 83-5.2
Strong-Motion Records from the Mammoth Lakes, California Earthquake of 6 January 1983	OSMS 83-1.1
Strong-Motion Records Recovered from the Mammoth Lakes, California Earthquake of 30 September 1981	OSMS 81-10.1
Strong-Motion Records Recovered from the Westmorland, California Earthquake of 25 April 1981	OSMS 81-5.1
Strong-Motion Records Recovered from the Trinidad-Offshore, California Earthquake of 8 November 1980	OSMS 80-11.1
Strong-Motion Records from the Livermore Earthquakes of 24 and 26 January 1980	PR 28
Strong-Motion Records from the Mammoth Lakes Earthquakes of May 1980	PR 27
Compilation of Strong-Motion Records and Preliminary Data from the Imperial Valley Earthquake of 15 October 1979	PR 26
Compilation of Strong-Motion Records from the Coyote Lake Earthquake of 6 August 1979	PR 25
Compilation of Strong-Motion Records Recovered from the Bishop, California Earthquake of 4 October 1978	OSMS 78-7.1
Compilation of Strong-Motion Records Recovered from the Santa Barbara Earthquake of 13 August 1978	PR 22
Catalog of Strong Motion Accelerograph Records Recovered by Office of Strong Motion Studies before January 1, 1982	SR 154
Catalog of Strong Motion Accelerograph Records Recovered by Office of Strong Motion Studies During 1982	SR 154A

## II. Processed Data Reports:

Plots of the Accompany Tape: BERKELEY86 (Building Response Data Set)	OSMS 92-02
Plots of the Accompany Tape: SIERRAMADRE91-INT1 (Ground, Building, and Lifeline Structure Response Data Set)	OSMS 92-01
Plots of the Accompany Tape: PALMSPRINGS86-IB, and B (Building Response Data Set)	OSMS 91-16

Title	Number
Plots of the Accompany Tape: LIVERMORE80 (Ground and Building Response Data Set)	OSMS 91-15
Plots of the Accompany Tape: LEXINGTON88-89 (Lifeline Structure Response Data Set)	OSMS 91-14
Plots of the Accompany Tape: ALUMROCK88 (Building Response Data Set)	OSMS 91-13
Plots of the Accompany Tape: WHEELERRIDGE88 (Lifeline Structure Response Data Set)	OSMS 91-12
Plots of the Accompany Tape: CHALFANT86 (Ground and Lifeline Structure Response Data Set)	OSMS 91-11
Plots of the Accompany Tape: WHITTIER87-CALTECH (Ground Response and Building Response Data Set)	OSMS 91-10
Plots of the Accompany Tapes: LOMAPRIETA89-IL, and L (Lifeline Structure Response Data Set)	OSMS 91-08
Plots of the Accompany Tapes: LOMAPRIETA89-IB1, IB2, IB3, IIB1, IIB2, and IIIB (Building Response Data Set)	OSMS 91-07
Plots of the Accompany Tapes: LOMAPRIETA89-IG, and G (Ground Response Data Set)	OSMS 91-06
Third Interim set of CSMIP Processed Strong-Motion Records from the Santa Cruz Mountains (Loma Prieta) Earthquake	OSMS 90-05
Processed Strong-Motion Data from the Base-Isolated San Bernardino County Law & Justice Center for the Upland earthquake of February 28, 1990	OSMS 90-03
Second Interim Set of CSMIP Processed Strong-Motion Records from the Santa Cruz Mountains (Loma Prieta) Earthquake of October 17, 1989	OSMS 90-01
Plots of the Processed Data for the Interim Set of 14 Records from the Santa Cruz Mountains (Loma Prieta) Earthquake of October 17, 1989	OSMS 89-08
Processed Strong-Motion Data from the Whittier, California Earthquake of 1 October 1987; Part I Ground-Response Records	OSMS 89-03
The Cerro Prieto, Baja California Earthquake of February 6, 1987 and Processed Strong-Motion Data	OSMS 87-04
Processed Strong Motion Data from the Palm Springs Earthquake of 8 July 1986; Part I Ground-Response Records	OSMS 87-01
Processed Strong Motion Data from the San Salvador Earthquake of October 10, 1986	OSMS 86-07

<u>Title</u>	<u>Number</u>
Processed Data from the Strong-Motion Record Obtained at a Base-Isolated Building in Rancho Cucamonga, California during the Redlands Earthquake of 2 October 1985	OSMS 86-01
Processed Data from Strong-Motion Records of the Morgan Hill Earthquake of 24 April 1984: Part I Ground-Response Records	OSMS 85-04
Processed Data from Strong-Motion Records of the Morgan Hill Earthquake of 24 April 1984: Part II Structural-Response Records	OSMS 85-05
Processed Data from the Strong-Motion Records of the Imperial Valley Earthquake of 15 October 1979.	SP 65
Processed Data from the San Juan Bautista 101/156 Separation Bridge and the San Juan Bautista Freefield Records from the Coyote Lake Earthquake 6 August 1979	SP 64
Processed Data from the Gilroy Array and Coyote Creek Records, Coyote Lake, California, Earthquake 6 August 1979	PR 24
Processed Data from the Strong-Motion Records of the Santa Barbara Earthquake of 13 August 1978. (in three volumes)	SR 144

### III. Other Reports:

Standard Tape Format of CSMIP Strong-Motion Data Tapes	OSMS 85-03
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## AVAILABLE STRONG-MOTION DATA TAPES:

<u>Tape Name</u>	<u>Description</u>
PUGETSOUND65	Puget Sound, Washington Earthquake of 29 April 1965; Vol. 1, 2 and 3 data from two buildings.
SANTBARB78	Santa Barbara earthquake of 13 August 1978.
IMPERIAL79	Imperial Valley earthquake of 15 October 1979, County Services Bldg. and other CSMIP stations.
COYOTE79A	Coyote Lake earthquake of 6 August 1979, Gilroy Array stations.
COYOTE79B	Coyote Lake earthquake of 6 August 1979, San Juan Bautista overpass and nearest free-field station.
COYOTE79C	Coyote Lake earthquake of 6 August 1979, Halls Valley station.
LIVERMORE80	Livermore earthquakes of 24 and 27 January 1980; data from 5 ground-response and 2 buildings for the earthquake on the 24th and data from 6 ground-response and 2 buildings for the earthquake of the 27th.
MAMMOTH80A	Mammoth Lakes earthquakes of 25 May 1980 at 09:34 and 09:49 PDT.
MAMMOTH80B	Mammoth Lakes earthquakes of 25 May 1980 at 12:45 and 13:36 PDT.
MAMMOTH80C	Mammoth Lakes earthquakes of 26 May 1980 at 11:58 PDT and 27 May 1980 at 07:51 PDT.
WESTMOR81	Westmorland earthquake of 26 April 1981.
COALINGA83	Coalinga earthquake of 2 May 1983, 16:43 PDT; Vol. 2 and 3 data for 47 records.
COALINGA83-IA	Coalinga earthquake of 2 May 1983, Vol. 1 data for first 22 records.
COALINGA83-IB	Coalinga earthquake of 2 May 1983, Vol. 1 data for remaining 25 records.
COALINGA83AS	Vol. 2 and 3 data for eight aftershocks of the Coalinga 2 May 1983 earthquake. The aftershocks occurred between 8 May and 11 September 1983, and were of magnitude (ML) 4.3 - 6.0.
COALINGA83AS-I	Vol. 1 data for the Coalinga aftershock records included on the tape COALINGA83AS.
RIODEL8083	Processed data from the Highway 101 Overpass at Rio Dell for the earthquakes of: 8 Nov 1980 (6.9ML Trinidad-Offshore); 16 Dec 1982 (4.4ML Rio Dell) and 24 Aug 1983 (5.5ML Cape Mendocino Offshore).
MAMMOTH83	Mammoth Lakes earthquakes of 7 Jan 1983 at 01:38 and 03:24 GMT.

<u>Tape Name</u>	<u>Description</u>
MORGANHILL84-IG	Morgan Hill earthquake of 24 April 1984; Vol. 1 data from 19 ground-response stations.
MORGANHILL84-G	Morgan Hill earthquake of 24 April 1984; Vol. 2 and 3 data from 19 ground-response stations.
MORGANHILL84-IS	Morgan Hill earthquake of 24 April 1984; Vol. 1 data from 7 buildings and one bridge.
MORGANHILL84-S	Morgan Hill earthquake of 24 April 1984; Vol. 2 and 3 data from 7 buildings and one bridge.
REDLANDS85	Redlands earthquake of 2 October 1985; data from the Law & Justice Building at Rancho Cucamonga.
BERKELEY86	Berkeley Hills earthquake of 29 March 1986; data from a 2-story Hospital in Berkeley.
HOLLISTER86	Hollister earthquake of 26 January 1986; data from 2 ground-response stations and Hollister - 1-story Warehouse.
MTLEWIS86	Mt. Lewis earthquake of 31 March 1986; data from 1 ground-response station and 3 buildings.
SANSALVADOR86	San Salvador earthquake of October 10, 1986; data from 9 stations.
PALMSPRINGS86-IG	Palm Springs earthquake of 8 July 1986; Vol. 1 data from 18 ground-response stations.
PALMSPRINGS86-G	Palm Springs earthquake of 8 July 1986; Vol. 2 and 3 data from 18 ground-response stations.
PALMSPRINGS86-IB	Palm Springs earthquake of 8 July 1986; Vol. 1 data from 5 buildings.
PALMSPRINGS86-B	Palm Springs earthquake of 8 July 1986; Vol. 2 and 3 data from 5 buildings.
CHALFANT86	Chalfant earthquake sequence of July 1986 at 9 stations including Lake Crowley - Long Valley Dam.
CERROPRIETO87	Cerro Prieto, Baja California earthquake of February 6, 1987; data from 1 ground-response station.
WHITTIER87-IG	Whittier earthquake of 1 October 1987; Vol. 1 data 36 from 36 ground-response stations.
WHITTIER87-G	Whittier earthquake of 1 October 1987; Vol. 2 and 3 data from 36 ground-response stations.
WHITTIER87-IB1	Whittier earthquake of 1 October 1987; Vol. 1 data from first 10 of the 18 buildings.
WHITTIER87-IB2	Whittier earthquake of 1 October 1987; Vol. 1 data from last 8 of the 18 buildings.
WHITTIER87-IIB	Whittier earthquake of 1 October 1987; Vol. 2 data from all 18 buildings.
WHITTIER87-IIIB	Whittier earthquake of 1 October 1987; Vol. 3 data from all 18 buildings.

<u>Tape Name</u>	<u>Description</u>
WHITTIER87-L	Whittier earthquake of 1 October 1987; Vol. 1, 2 and 3 data from 3 lifeline structures (1 bridge and 2 dams).
WHITTIER87-CALTECH	Whittier earthquake of 1 October 1987; Vol. 1, 2 and 3 data from 10 Caltech Stations.
WHEELERRIDGE88	Wheeler Ridge area earthquake of 10 June 1988; data from California Division of Water Resources station at Edmonston Pumping Plant (basement).
ALUMROCK88	Alum Rock earthquake of 12 June 1988; data from Milpitas - 2-story Industrial Building.
LEXINGTON88-89	Lake Elsmar earthquakes of 27 June 1988 and 8 August 1989; data from Lexington Dam.
UPLAND90-INTERIM	Upland earthquake of 28 February 1990; Vol. 1, 2 and 3 data from the base-isolated San Bernardino County Law & Justice Center.
LOMAPRIETA89-IG	Loma Prieta earthquake of 17 October 1989; Vol. 1 data from 44 ground-response stations.
LOMAPRIETA89-G	Loma Prieta earthquake of 17 October 1989; Vol. 2 and 3 data from 44 ground-response stations.
LOMAPRIETA89-IB1	Loma Prieta earthquake of 17 October 1989; Vol. 1 data from first 10 of 30 buildings.
LOMAPRIETA89-IB2	Loma Prieta earthquake of 17 October 1989; Vol. 1 data from middle 10 of 30 buildings.
LOMAPRIETA89-IB3	Loma Prieta earthquake of 17 October 1989; Vol. 1 data from last 10 of 30 buildings.
LOMAPRIETA89-IIB1	Loma Prieta earthquake of 17 October 1989; Vol. 2 data from first 15 of 30 buildings.
LOMAPRIETA89-IIB2	Loma Prieta earthquake of 17 October 1989; Vol. 2 data from last 15 of 30 buildings.
LOMAPRIETA89-IIIB	Loma Prieta earthquake of 17 October 1989; Vol. 3 data from all 30 buildings.
LOMAPRIETA89-IL	Loma Prieta earthquake of 17 October 1989; Vol. 1 data from all 7 lifeline structures.
LOMAPRIETA89-L	Loma Prieta earthquake of 17 October 1989; Vol. 2 and 3 data from all 7 lifeline structures.
SIERRAMADRE91-INT1	Sierra Madre earthquake of 28 June 1991; Vol. 1, 2 and 3 data from the 7 ground-response, 3 buildings and 1 lifeline station.

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Footnotes:

Each tape contains Vol. 1 data (uncorrected acceleration), Vol. 2 data (corrected acceleration, velocity and displacement) and Vol. 3 data (response and Fourier amplitude spectra) unless otherwise specified. The magnetic tapes are provided at cost. Included with each tape is a copy of either the processed data report (if available) or the plots of the data.

The Vol. 2 and 3 data are also available on floppy disks for use in personal computers. Requests for the reports, data tapes, data disks and/or for additional information should be addressed to:

Data Reduction Manager  
Office of Strong Motion Studies  
Division of Mines and Geology  
California Department of Conservation  
801 K Street, MS 13-35  
Sacramento, CA 95814-3531

Phone: (916) 322-3105